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ABSTRACT

The report documents the results of a 1967 survey of health professionals in the four-State Western Interstate Commission for Higher Education (WICHE) Mountain States Regional Medical Program (MS/RMP). Addressed to health professionals in each of the four States--Idaho, Montana, Nevada, and Wyoming--the survey focuses primarily on the characteristics and continuing education needs of the Mountain State health professionals. The disease categories of heart disease, cancer, and stroke are emphasized. Part 1 reviews the major findings of the survey data analysis, providing summary profiles of the following groups: physician, dentist, hospital administrator, registered nurse, licensed practical nurse, medical/laboratory technologist, physical therapist, radiologic/X-ray technologist. Part 2 presents the survey design and analysis plan. Part 3, making up the major body of the report, examines each of the professional groups listed above as they relate to: selected personal and professional characteristics, need for continuing education, desired methods and procedures of continuing education, and other factors relevant to continuing education. Statistical findings are discussed and tabulated. Part 4 reports the patient referral patterns and practices of physicians and dentists. Findings and conclusions are discussed along with their implications for immediate and long-range actions. Survey instruments are appended. (MW)

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Report of a

SURVEY ON CONTINUING EDUCATION NEEDS FOR HEALTH PROFESSIONALS

Prepared by
System Development Corporation
Santa Monica, California
For

The WICHE Mountain States Regional Medical Program

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Mountain States Regional Medical Program
Western Interstate Commission for Higher Education
P.O. Drawer P Boulder, Colorado 80302

June, 1969

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FOREWORD

The Western Interstate Commission for Higher Education (WICHE) Mountain States Regional Medical Program (MS/RMP) is but one of fifty-five such programs established by the United States Congress through Public Law 89-239. The MS/RMP is a program of local initiative and direction within the states of Idaho, Montana, Nevada, and Wyoming. Its primary purpose is to develop essential programs and services within these four states to more effectively combat heart disease, cancer, stroke, and related diseases. This can be accomplished through educational programs, improved services, or both. To determine what is needed, when, and how, requires careful imaginative planning to optimize use of scarce resources and make the most effective inroads against major diseases. The MS/RMP has been, and continues to be, committed to a systematic approach to the determination of needs and to an approach that involves the health community in this specification to the greatest extent possible. One of several approaches to planning it has used is a comprehensive survey of needs as seen by the health professionals in the area. This report is based on data obtained through that survey.

By involving health professionals, we can make a series of statements that are representative of total regional needs (as contrasted to isolated area need). Further, needs may be identified on a continuum, ranging from the entire region to a small area within it and ordered in terms of priority for resolution along that continuum.

The MS/RMP health professional survey provided an opportunity for all of the physicians, dentists, hospital and nursing home administrators, medical or laboratory technologists, X-ray or radiological technologists, and physical therapists in the four-state Region to participate. In addition, representative samples of the registered nurses and licensed practical nurses were given this opportunity. The responses from these health professional were gratifying; they responded in sufficient detail and in large enough numbers to allow the staffs to use the information obtained with confidence.

In this report, the MS/RMP examines the responses of the participating health professionals in five major areas:

- Their stated needs for continuing education
- Their preferred solutions to these continuing education needs
- Their assessment of the availability of different types of educational programs and evaluation of their need
- Their assessment, in selected areas, of the quality of services provided to the patient and his community
- Some indication of the extent and conditions under which the physicians and dentists refer patients outside their community for medical care.

The areas analyzed in this report are the primary educational and patient services sections from the survey. Those who use the report can do so to obtain direction for program development at the community level. Also, an overall assessment of the educational needs for the Region can be made as well as the appropriate mechanisms for the inauguration of "subregional" plans for implementation.

In this manner, realistic and practical priorities for program development will be established. To the extent that this occurs, the Region will discharge one of its major commitments: to provide programming assistance to the health professional where needed and in terms of a systematically established set of regional priorities.

The planning, design, and conduct of this survey required many specialized talents and dedication from all who participated. Special credit for any success which it will achieve is due to the MS/RMP state directors and staffs in each of the four states and the consultants who assisted in the design of the questionnaire, determined the approach to its use in the survey, and analyzed the data which the survey produced.

The Region is indebted to the many who responded and to the many from these health professional groups who assisted in the early specification of the types of questions to include in the survey instruments. In a very real sense, it is these individuals who are responsible for the high quality and comprehensive data base which makes this report, and other program planning reports, possible.

This document was produced by the System Development Corporation for the WICHE Mountain States Regional Medical Program. Its principal authors were Arthur D. Bernstein and Alfred P. Parsell.

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June 20, 1969

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PART ONE

SUMMARY OF FINDINGS

SUMMARY OF FINDINGS

This report documents the results of a survey of health professionals in the four-state WICHE Mountain States Regional Medical Program (MS/RMP). The survey was conducted in the fall of 1967 and was addressed to professionals in the medical and health fields in each of the four states--Idaho, Montana, Nevada, and Wyoming. The focus of this report is primarily on the characteristics of the Mountain State health professionals and their needs for continuing education and other training with emphasis on the disease categories of heart disease, cancer, and stroke. The analysis of the survey data performed for this report probes more deeply into the interrelationships of those variables revealed to be important in an earlier and more general analysis and report published in September, 1968.

This section of the report--Part One--presents an overview of the major findings of the analysis of the survey data. This overview is made up of a series of summary profiles of each of the health professional groups included in the study. More detailed discussions of the findings for each group are included in later sections of the report.

I. PROFILE OF THE MOUNTAIN STATES PHYSICIAN

On the basis of analysis of selected characteristics, physicians in the Mountain States Region may be described as follows:

- They are in their late forties

  On the average, they are nearly 47 years of age.

  There are few very young or very old physicians (94% are between 30 and 70 years of age).

  State averages are close to the Region average, although Idaho physicians are slightly older (average age 48 years) and Montana physicians slightly younger (average age just over 45 years).

- They have been practicing nearly 20 years

  The average Mountain States physician has been in active practice for about 18 years.

  State averages are extremely close to the Region average.

- More than half of them are specialists

  For the Region as a whole, about 58% of the physicians consider their practice to be specialized.

  However, considerable variation is found from state to state within the Region and from zone to zone within the states.

- Most of the specialists are board certified

  Throughout the Region, 88% of those in specialized practice are board certified.

  With very few exceptions (one zone in Idaho, two zones in Montana), this proportion holds for states and zones in the Region.

- Only half of the general practitioners belong to the AAGP

- In their clinical practices with respect to heart disease, cancer, and stroke, Mountain State physicians treat specific conditions with varying degrees of frequency.

  Peripheral vascular disease cases are seen by the largest number of physicians (80%).

  Cancer of the central nervous system cases are seen by fewest physicians (42%).

  More Montana physicians and fewer Nevada physicians see cases in each of the three areas.

A. NEED FOR CONTINUING EDUCATION

In terms of responses indicating a need for continuing education in 18 specified clinical conditions of heart disease, cancer, and stroke:

- At least half of the physicians indicate a need for education in all of the areas

  Responses range from 72% for education in the area of lymphoma and leukemia to 51% for rheumatic fever.

  A higher proportion of Montana physicians and a lower proportion of Nevada physicians express the need for continuing education than do those in the other states.

- Two cancer conditions rank among the top six

  lymphoma and leukemia (72%)

  cancer of oral cavity, head, neck (65%).

- Three heart disease conditions rank among the top six

  peripheral vascular disease (68%)

  cardiac arrhythmias (67%)

  congenital heart defect (67%)

- One stroke condition ranks among the top six

  stroke rehabilitation (65%)

- There is a definite relationship between a physician's experience and his expressed need for education

  More physicians with between 10 and 29 years of practice express the need for education than do those with fewer years of practice.

- The need for continuing education is most apparent among general practitioners

  At least two out of every three general practitioners express a need for education in all 18 clinical conditions.

  Specialists generally express half as much need for education in these fields.

- Both specialists and general practitioners are consistent in ranking their needs for education

  Lymphoma and leukemia and peripheral vascular disease rank high for each group.

  Both groups manifest the lowest educational interest in congestive heart failure, hypertensive cardiovascular disease, rheumatic heart disease, and rheumatic fever.

- No consistent relationship is observed between expressions of interest in education for particular clinical conditions and actual clinical practice experience

  Two clinical conditions (peripheral vascular disease and cardiac arrhythmias) show both high physician practice and high educational need.

  Three clinical conditions (congenital heart defect, stroke rehabilitation, and cancer of the oral cavity, head, and neck) show low physician practice exposure but high physician expression of educational need.

  Four clinical conditions (hypertensive cardiovascular disease, cancer of the skin, rheumatic heart disease, and congestive heart failure) show high physician practice exposure but low physician expression of educational need.

B. PHYSICIAN PREFERENCES IN EDUCATIONAL METHODS

There are many ways in which physicians may have access to continuing education. A number of these are already available, in some degree, to Mountain States physicians; others are not. Expressions of physician preferences in this area undoubtedly reflect actual experience as well as theoretical preference.

- Three methods are available to and used by more than 90% of the physicians:

  medical journals

  personal library

  contacts with colleagues.

- The leading methods of continuing education considered needed but not available by Mountain States physicians are

  medical television

  lectures sponsored by medical schools

  medical radio

  demonstrations

  group discussions

- The younger and less experienced physicians (those having less than ten years of active practice) have different perceptions about access to and need for various continuing education methods than do those who are older, more experienced (between 10 and 29 years of active practice), and in the majority (68% of all physicians).

  Less experienced physicians indicate that such methods as lectures, panels, and symposia sponsored by local medical societies are less available and more needed that the more experienced physicians say they are.

  Group discussions are considered more needed and less available by the younger physicians than by those with more years of practice.

  In contrast, educational films are more widely supported by the older group than by the physicians with fewer than ten years of practice.

- Among the more favored methods of education there were only a few observable differences among the states in terms of preferences by the physicians

  Medical television and medical radio: the virtual absence of these media obscures any real comparisons, except to suggest that both are susceptible to much greater development and use.

  Physicians in Nevada appear to make much greater use of hospital library materials than do Montana physicians.

  Idaho physicians favor local medical society lectures to a greater extent than do Region physicians generally and Nevada physicians particularly.

  Montana physicians show a desire for medical school lectures that is much higher than elsewhere in the Region.

CONSUMER HEALTH PROBLEM SUPPORT

Teaching and other support provided patients and their families in selected health problem areas is generally considered to be "good" or "excellent" by a majority of Mountain States physicians.

- In only three problem areas do less than a majority give a "good" or "excellent" rating:

  paralysis

  bowel and bladder incontinence

  speech defects

- There are substantial differences among the states in these ratings

  The fewest "good" and "excellent" ratings are given by Wyoming physicians.

  The greatest number of "good" and "excellent" ratings is given by Idaho and Montana physicians.

D. COMMUNITY HEALTH PROCEDURES

- Information to the public

  Six out of ten Mountain States physicians consider the dissemination of information to the public concerning prevention, diagnosis, treatment, and rehabilitation of heart disease, cancer, and stroke to be "satisfactory".

- Inter-agency exchange of patient data

  A majority (56%) of the physicians consider current procedures in this area to be adequate.

  Fewer physicians in Wyoming (41%) than in any of the other states consider these procedures to be adequate.

- Inter-departmental patient data exchange

  Eight out of ten physicians feel that current procedures are satisfactory here.

E. PHYSICIAN REFERRAL PRACTICES

Definite relationships are found between the practice of referral, the source of referral, the kind of practice of the referring physicians, and his expressed need for continuing education.

- The general practitioners, in contrast to the specialist, has the greater tendency

    to make more referrals

    to refer more patients inside the local community

    to feel the greater need for continuing education in heart disease, cancer, and stroke.

- Referral of patients for rehabilitative care is more likely to be made within rather than outside the local community.

- Although relatively small, there is a noticeable practice of referring patients out of state and even out of the Region.

II. PROFILE OF THE MOUNTAIN STATES DENTIST

On the basis of anlysis of selected characteristics, dentists in the Mountain States Region may be described as follows:

- They are in early middle age

    On the average, they are about 44 years old.

    Approximately 75% of the dentists are over 30 and under 60 years of age.

    As a group, Nevada dentists are younger than other dentists in the Region (average age of Nevada dentists is just over 39 years).

    Montana dentists, as a group, average 46 years of age, somewhat higher than the average for the Region and the other states.

- They have been practicing nearly 17 years

    Two-thirds of the dentists have been in practice between 4 and 30 years.

    While the Region average is about 17 years, state averages vary from a low of just over 12 years in Nevada to a high of over 19 years in Montana.

- Most of them practice general dentistry

  Seven out of eight Mountain States dentists describe their practice as general dentistry.

  Of the 77 reporting specialists, 70% are in the fields of orthodontics or pedodontics.

  Specialists generally tend to be concentrated in a relatively few zones, largely urban, within the states.

- They see more patients with heart disease and stroke than with cancer

  Most Mountain States dentists see very few patients with known cancer conditions (average of 13 cases per year per dentist).

  Most dentists see relatively few cases of known heart disease or hypertension (no more than 30 cases per year), but some dentists see quite a few (more than 70 cases per year).

  One out of five dentists performs oral cytology and nearly half of them (46%) perform oral biopsies.

  Wyoming dentists perform both oral cytology and oral biopsy tests at a markedly higher rate than do dentists in the other states.

A. NEED FOR CONTINUING EDUCATION

In terms of responses indicating a need for more education and/or information concerning heart, cancer, and stroke conditions as related to their practice:

- Four out of five Mountain States dentists indicated such a need

  More than 80% of the dentists indicated a need for more education in all three clinical fields.

  With a few minor exceptions, dentists in each of the states responded in a manner close to the average for the Region.

- Need for education is related to number of years in active practice

  The great majority of dentists indicating a need for education in heart disease, cancer, and stroke are those who have been in active practice less than 20 years.

  Each of the states shows this same distribution.

- The more cases of heart disease, cancer, or stroke seen, the more likely is a response indicating need for education

- Dentists who perform clinical tests are more apt to want education than those who do not.

  Nine out of ten dentists who perform oral cytology express need, as against eight out of ten of those who do not perform such tests.

  Differences between those who did and those who did not perform oral biopsies are slight--75% to 80% or better in both groups want more education.

  These relationships hold throughout the Region and in each of the states.

B. DENTIST PREFERENCES IN EDUCATIONAL METHODS

Dentists have several avenues of access to continuing education. Some are used more than others. Still others might be used to a greater extent if they could be made more available.

- Four methods are consistently used by more than 70% of the dentists in the Mountain States Region:

  dental journals

  personal library

  contacts with colleagues

  unsolicited dental literature.

- The leading methods of continuing education considered needed but not available by Mountain States dentists are:

    demonstration clinics

    medical television

    supervised clinical practice

    group discussions

    medical radio

- There is a slight but noticeable tendency for dentists with fewer years of active practice to make use of all available methods to a greater extent than dentists with many years of active practice.

    For the most part, it is dentists with fewer than 20 years of active practice who are most aware of their need for methods of continuing education not available to them.

    Dental specialists, although few in number, generally appear to have available to them all the continuing education methods they feel they need.

    All of these responses are quite uniformly distributed throughout the Region among all four of the states.

C. DENTIST REFERRAL PRACTICES

By the nature of their practice, dentists have more limited contact with heart disease, stroke, and cancer patients than do physicians. However, many do perform clinical services in these disease areas (particularly for cancer), and they do make referrals.

- There are two major reasons for referral of patients by dentists:

    diagnostic studies

    treatment

- Dentists tend to make most of their referrals within the local community

- There are noticeable differences in terms of years of experience

    Proportionately more dentists with fewer than 10 years of active practice make referrals outside the local community than do those with 10 to 20 years of experience

    Dentists with more than 30 years of practice make the fewest referrals of all, either within or outside the local community.

III. PROFILE OF THE MOUNTAIN STATES HOSPITAL ADMINISTRATOR

On the basis of analysis of selected characteristics, hospital administrators in the Mountain States may be described as follows:

- They are middle-aged

    On the average, they are just over 46 years of age.

    There are very few very young hospital administrators (68% are between the ages of 37 and 55 years).

    As a group, the youngest hospital administrators are found in Wyoming, the oldest in Nevada.

- They have been practicing under 10 years

    The average Mountain States hospital administrator has been working at his profession just over 9 years.

    In terms of the regional average (9.2 years), Idaho administrators average one year less of experience and Nevada administrators average one year more.

- They are affiliated with a general hospital

    Only ten (7.8%) of the hospital administrators in the sample do not administer a general hospital.

    Eight of the ten are in Idaho (five) and Wyoming (three).

- Nearly two-thirds of them are not members of the American College of Hospital Administrators

  Throughout the Region, only 35.5% of the hospital administrators report membership in the society.

  State distributions do not differ markedly from the regional distribution.

A. NEED FOR CONTINUING EDUCATION

Hospital administrators, as such, are not directly involved in the clinical aspects of patient care, although many of the hospital staff members under their supervision are so involved. Continuing education questions directed to the personal needs of administrators dealt largely with areas related to business and administrative functions.

- Two-thirds or more of all Mountain States hospital administrators indicate a need for additional training in all areas related to hospital administration.

- The need is greatest for special courses in Hospital/Nursing Home Administration, Business Management, and Personnel Management.

B. PREFERRED EDUCATIONAL METHODS

- Nine out of ten Mountain States hospital administrators feel that educational television is the procedure most needed for their staffs.

- Other educational procedures which at least seven out of ten administrators feel are needed for their staffs are educational radio, programmed instruction, and special classes conducted in the hospital.

- Administrators generally feel that special in-house courses are more needed by medical and administrative personnel than by allied professionals.

C. STAFF COURSE ATTENDANCE

- All but five administrators would permit staff personnel to attend short-term courses outside the local community if expenses were paid by an outside source.

- Principal factors mentioned as inhibiting staff attendance at courses outside the community are lack of replacement personnel on the part of the hospital and family responsibilities on the part of the personnel.

- All hospital administrators would permit hospital personnel to take special training in the prevention, treatment, and rehabilitation of heart disease, cancer, and stroke conditions if such training could be offered locally.

- Techniques to encourage greater participation in continuing education most frequently mentioned by hospital administrators are holding classes closer to home and payment of expenses.

D. HOSPITAL FACILITIES FOR EDUCATION

- A majority (63%) of the hospital administrators indicate they have adequate classroom space in their facilities for staff training.

- A smaller number (48%), however, feel that they have adequate equipment in their facilities for continuing education programs.

- In only one facility throughout the Region is there a full-time medical staff member to conduct continuing education for the medical staff, and only 24 hospitals have access to part time personnel for this purpose.

- Slightly more than one-third of the Region's hospitals have full- or part-time training personnel to work with the non-medical staff.

E. CONSUMER HEALTH PROBLEM SUPPORT

Teaching and other support provided patients and their families in selected health problem areas is not considered uniformly excellent or good by Mountain States hospital administrators.

- A majority give a good or excellent rating to only four areas:

  special dietary needs

  colostomy

  ileostomy

amputations

- Two areas are considered good or excellent by no more than one-third of the administrators

  paralysis

  speech defects

- There are some state differences in ratings

  Hospital administrators in Nevada generally give higher "good-excellent" ratings in all areas than do those in the other states.

  Ratings tend to be more variable in the other states, suggesting that from the administrators' point of view patient support is spotty.

F. COMMUNITY HEALTH PROCEDURES

- Information to the public

  More than half (55%) of the hospital administrators do not feel that the dissemination of information to the public concerning prevention, diagnosis, treatment, and rehabilitation of heart disease, cancer, and stroke is satisfactory.

- Inter-agency exchange of patient data

  Six out of ten administrators consider current procedures in the area to be adequate.

- Inter-departmental patient data exchange

  Almost all of the hospital administrators (94%) feel that current procedures are satisfactory here.

IV. PROFILE OF THE MOUNTAIN STATES REGISTERED NURSE

On the basis of analysis of selected characteristics, registered nurses in the Mountain States Region may be described as follows:

- They are in their early forties

On the average, they are about 42 years of age.

Three out of five Mountain States RNs are over 40 years of age.

The age distribution of RNs is consistent for all states and zones.

- Most of them hold diplomas

For the Region as a whole, 85% of the RNs in the sample hold diplomas.

None of the RNs included in the sample has completed work for a Master's degree.

Montana is the only one of the four states in which all of the sampled RNs report having at least an Associate of Arts or Baccalaureate degree.

- They have been practicing about 15 years

On a regional basis, one-half of the RNs have had less than 15 and one-half have had more than 15 years of active practice.

Four out of ten RNs have been in practice between 5 and 15 years.

Less than one-fifth of the RNs (18%) have had 25 or more years of practice.

- Nearly half of them are not members of a national nursing organization

Only 55% of the Mountain States RNs report membership in the American Nursing Association or the National League of Nurses.

Of these, by far the majority are affiliated with the American Nursing Association.

Membership in the A.N.A. ranges from a low of 36% in Wyoming to a high of 56% in Nevada.

- In their clinical practice, most RNs come in most frequent contact with patients suffering from:

    congestive heart failure

    hypertensive cardiovascular disease

    cerebral vascular accident

    cancer of the gastro-intestinal tract

    cancer of the genito-urinary tract

- Well over half (60%) are working to supplement family income or to support themselves.

A. NEED FOR CONTINUING EDUCATION

In terms of responses indicating a need for continuing education in 18 specified clinical conditions of heart disease, cancer, and stroke:

- At least four out of five Mountain States RNs express a need for education in all areas

    More than nine out of ten RNs throughout the Region and in each of the states express a need for education in cardiac arrhythmias.

    The clinical area ranking lowest among RNs (cancer of the breast) is, nevertheless, felt to be an area of needed education by 80% of the Region's RNs.

    Although there are 18 clinical areas addressed, the RN response difference concerning need for education in these areas is, on a Region basis, less than 13% (80.0% to 92.6%), and no more than 14.6% (Nevada) on a state basis.

- At least nine out of ten RNs express a need for education in seven of the clinical areas:

    Four areas relate to heart disease

    Two areas relate to cancer

    One area relates to stroke

- There is an observable relationship between RN experience (years of active practice) and expressed need for continuing education.

  RNs with between ten and twenty years of active practice are the ones who most frequently express need for education in almost all areas.

  The RN experience group expressing the least interest in continuing education in all areas is made up of those who have been practicing for more than 20 years (although, even here, at least three out of four RNs want continuing education in all areas).

  More of the RNs who have been practicing fewer than 10 years are interested in cancer education generally than are those in the other experience groups.

B. RN PREFERENCES IN EDUCATIONAL METHODS

Nurses have several avenues of access to continuing education, some of which are used more than others. Still others might be used to a greater extent if they could be made more available.

- Educational methods considered to be needed but not available by at least four out of ten RNs are:

  short-term training courses

  educational television

  educational radio

  workshops

- The younger and less experienced nurses have perceptions about access to and need for various continuing education methods that differ somewhat from those held by nurses with more experience.

  RNs with 0 to 9 years of experience consistently show the highest need for all but two of the methods listed (educational radio and conventions/meetings).

  RNs with 20 or more years of experience indicate the least desire or need for all methods but one (conventions/meetings of professional societies).

RNs in the middle experience group (10 to 19 years of active practice) are also between the younger and older groups in educational preferences, although they rank educational television and radio fairly high.

- More than half the RNs indicate they have had some additional training beyond their basic education.

  More of those who have had over 20 years of practice (64%) have had such training.

  Fewer of those with under 10 years of practice (19%) have had such additional training.

  RNs with only a diploma are more likely to have had additional formal or on-the-job training than are those with Bachelor's or Associate of Arts degrees.

  More RNs with Associate of Arts degrees have had no additional training than has any other educational group.

- State differences in RN preferences as to methods of education are minor and relatively insignificant.

C. SHORT-TERM COURSE ATTENDANCE

- Outside local community

  Three out of four RNs would not attend at their own expense.

  More than half (56%) would not attend even if expenses were paid.

  State responses are consistent with Region, although a slightly higher percentage of Idaho nurses (64%) would attend.

  Family responsibility was the principal reason given for inability to attend even if expenses were paid.

- Within local community

  Nine out of ten RNs would attend short-term courses held in their own communities.

  This ratio holds for each of the states and most of the zones within the states.

A

- Three techniques to encourage greater participation in continuing education are stressed by more than 90% of the nurses.

  holding training programs closer to home

  payment of expenses

  more complete information about existing programs

- Desired frequency of course attendance

  A majority of the RNs (54%) prefer a once-a-month training course schedule

  About 25% would prefer courses to be scheduled every six months

D. RN PREFERENCES IN HEART, CANCER, AND STROKE EDUCATION

There are many factors that could be included in heart disease, cancer, and stroke education. Three were selected for special emphasis in this survey. State responses show some variability, but the overall trends are similar to the Region trend summarized below.

- Prevention

  More nurses indicate an interest in learning more about the prevention of heart disease than of cancer or stroke.

- Treatment

  Heart disease was also favored by more RNs as a subject for training in treatment than were cancer or stroke.

- Rehabilitation

  RN interest in rehabilitation training was highest for stroke, next for heart disease, and lowest for cancer.

- Combined training

  Given the choice, many more nurses would like training in all three areas for all three disease categories than for any of them singly or in any lesser combination.

E. CONSUMER HEALTH PROBLEM SUPPORT

Teaching and other support provided patients and their families is selected health problem areas is not considered to be "good" or "excellent" by a majority of the Mountain States nurses.

- In only two of the nine problem areas do close to 50% of RNs give "good" or "excellent" ratings

  special dietary needs (46%)

  colostomy (46%)

- The states differ in these rankings

  lowest overall ratings are given by Idaho RNs

  highest overall ratings are given by Montana RNs

  Nevada and Wyoming ratings are variable

F. COMMUNITY HEALTH PROCEDURES

- Information to the public

  Dissemination of information to the public concerning prevention, diagnosis, treatment, and rehabilitation of heart disease, cancer, and stroke is considered to be barely satisfactory by most Mountain States nurses.

  Nurses in Idaho are expecially negative, with only 39% giving a satisfactory rating, while Wyoming nurses are the most positive (70%).

- Inter-agency exchange of patient data

  About half of the Mountain States RNs consider the current procedures in this area to be adequate.

  The range in expression of satisfaction is from a low of 45% in Montana to a high of 57% in Nevada.

- Inter-departmental patient data exchange

  About seven out of ten RNs feel that current procedures are satisfactory here.

V. PROFILE OF THE MOUNTAIN STATES LICENSED PRACTICAL NURSE

On the basis of analysis of selected characteristics, licensed practical nurses in the Mountain States Region may be described as follows:

- They are in their mid-forties

  On the average, they are about 46 years old.

  Two-thirds of them are between 34 and 58 years of age.

  State and zone distributions are consistent with the regional distribution.

- They have fewer than 10 years of experience

  On a regional basis, two-thirds of the LPNs have between 2 and 16 years of active practice.

  While the regional average is 9 years of practice, nearly one-half of the Idaho LPNs have fewer than 5 years of practice.

- A majority are members of a state or national professional organization

  For the Region, 56% report membership.

  Responses vary widely among the states with Idaho and Wyoming above the regional average and Montana and Nevada well below (37% for each).

- In their clinical practice, most LPNs come in most frequent contact with patients suffering from

  hypertensive cardiovascular disease

  congestive heart failure

  cancer of gastro-intestinal tract

  cerebral vascular accident

  cancer of genito-urinary tract

- There are several reasons why they are working, the two most frequently given being supplement family income

sole support of family

A. NEED FOR CONTINUING EDUCATION

In terms of responses indicating a need for continuing education in 18 specified clinical conditions of heart disease, cancer, and stroke:

- About nine out of ten LPNs express a need for education in all areas

  Almost all LPNs (at least 95%) express a need for education in five clinical areas, each of which relates to heart disease.

  The LPN response rate for education need was at least 85% in each area and for each state.

- There is a slight relationship between LPN experience and expressed need for continuing education.

  The highest proportion of LPNs expressing educational need is found in the group with from 5 to 20 years of active practice.

  The lowest proportion is found in the group with more than 20 years of practice.

B. LPN PREFERENCES IN EDUCATIONAL METHODS

Licensed practical nurses have several avenues of access to continuing education, some of which are used more than others. Still others might be used to a greater extent if they could be made more available.

- At least half of the LPNs indicate the need for increased availability of three educational methods

  short-term training

  WCHEN courses

  workshops

- Educational preferences vary with years of experience

  Short-term training, workshops, special classes, and educational radio are most preferred by LPNs with fewer than five years of practice.

Short-term training, educational television, conventions/meetings and WCHEN courses are most preferred by LPNs with between 5 and 20 years of practice.

Educational films, professional books and journals, and programmed instruction are most preferred by LPNs with more than 20 years of practice.

- There are some state differences in preferences

Wyoming LPNs show the highest indication of education need in eight of the ten procedures listed.

C. SHORT-TERM COURSE ATTENDANCE

Among the licensed practical nurses, short-term training courses, demonstrations, workshops, and similar organized training programs are rated highly. There were conditions expressed as to course location, however.

- Outside local community

More LPNs would attend such outside courses if their expenses were paid (79%), than would if they have to pay their own expenses (37%).

Of those who would not attend even if all expenses were paid (21%), nearly one-half are from Idaho.

Family responsibilities and lack of replacement were the most frequently given reasons for inability to attend.

- Within local community

Almost all Mountain States LPNs (96%) would attend continuing education programs in their own community.

Interest in local programs is uniformly high throughout the Region and within each state.

- Holding training programs closer to home would be the single biggest stimulus to increased LPN participation

- Desired frequency of course attendance

Once a month is the frequency of course attendance preferred by a majority of the LPNs (67%).

The second ranking choice--every six months--is preferred by far fewer LPNs (19%).

D. LPN PREFERENCES IN TRAINING COURSE CONTENT

There are many factors that could be included in heart disease, cancer and stroke education. Three were selected for special emphasis in this survey. State responses show some variability, but the overall trends are similar to the Region trend as summarized below.

- Prevention

  More LPNs (61%) indicate an interest in learning more about the prevention of heart disease than of cancer (50%) for stroke (47%).

- Treatment

  Heart disease is also favored by more LPNs (82%) as a subject for training in treatment than are cancer (68%) or stroke (57%).

- Rehabilitation

  LPN interest in rehabilitation training is highest for stroke (59%), next for heart disease (55%), and lowest for cancer (41%).

- Combined Training

  Given the choice, many more nurses would like training in all three areas for all three disease categories than for any of them singly or in any lesser combination.

E. CONSUMER HEALTH PROBLEM SUPPORT

Teaching and other support provided patients and their families in selected health problem areas is not considered to be "good" or "excellent" by a majority of the Mountain States nurses.

- In only two of the nine problem areas do approximately one half of the LPNs give "good" or "excellent" ratings

  colostomy (51%)

  special dietary needs (49%)

- State rankings vary slightly from one problem area to another

  In Idaho, only colostomy is rated "good" or "excellent" by more than half the LPNs.

  In Montana, colostomy, special dietary needs, and speech defects are in the over 50% rate.

  In Nevada, only limited physical activity support is rated "good" or "excellent" by a majority of LPNs.

  In Wyoming, only colostomy and special dietary needs are rated "good" or "excellent" by a majority of the LPNs.

F. COMMUNITY HEALTH PROCEDURES

- Information to the public

  Just over half (52%) of the Mountain States LPNs consider dissemination of information to the public concerning prevention, diagnosis, treatment, and rehabilitation of heart disease, cancer and stroke conditions to be satisfactory.

- Inter-agency exchange of patient data

  Slightly more than half (54%) of the LPNs feel that current procedures are adequate.

- Inter-departmental patient data exchange

  Nearly three out of four LPNs (71%) feel that current procedures are satisfactory.

VI. PROFILE OF THE MOUNTAIN STATES MEDICAL/LABORATORY TECHNOLOGISTS

On the basis of analysis of selected characteristics, medical/laboratory technologists in the Mountain States Region may be described as follows:

- They are in their mid-thirties

  On the average, they are about 36 years old.

  Two-thirds of them are between 25 and 46 years of age.

  The youngest groups of M/LTs are found in Nevada and Wyoming, the oldest in Montana.

- They have been practicing for nearly 11 years

  On a regional basis, the average M/LT has been practicing for 10.7 years, and two-thirds of them fall within a range of from 2 to 19 years.

  Well over half (62.0%) of the Idaho M/LTs have nine or fewer years of practice.

- A sizeable majority are members of a state or national professional organization.

  For the Region, 70% report membership.

  For the states, membership rates vary no more than 10% (Wyoming is high with 79%, Nevada low with 61%).

- In their clinical practice, most M/LTs come in most frequent contact with patients suffering from

  lymphoma and leukemia

  cancer of the gastro-intestinal tract

  rheumatic heart disease

  myocardial infarction

  hypertensive cardiovascular disease

  congestive heart failure

- They are working for a variety of reasons, of which the two most frequently given are

  supplement family income

  self-support

A. NEED FOR CONTINUING EDUCATION

In terms of responses indicating a need for continuing education in 18 specified clinical conditions of heart disease, cancer, and stroke:

- More than half of the M/LTs express the need for continuing education in all areas

Highest indications of education need (75% or more) are for lymphoma and leukemia in the general cancer area and for four conditions in the general clinical area of heart disease.

Stroke rehabilitation is given the fewest choices of all conditions, but even here more than half the M/LTs (51%) indicate a need for training.

Nevada M/LTs lead the other states in seven areas of educational need--but they also indicate the least need in seven other areas.

In Wyoming, the M/LTs lead those in other states in expressed need in only one area (stroke rehabilitation); they exhibit the least interest of all the states in education in six areas.

- There is an observable relationship between M/LT experience and expressed need for continuing education.

Those M/LTs who have fewer than 5 years of active practice are below the regional average of expressed need for education in each of the 18 clinical areas.

The under 5 years of practice group is also lower than other experience groups in all clinical areas but one (peripheral vascular disease).

B. M/LT PREFERENCES IN EDUCATIONAL METHODS

M/LTs have several avenues of access to continuing education, some of which are used more than others. Still others might be used to a greater extent if they could be made more available.

- More than four out of ten M/LTs indicate the need for increased availability of five educational methods

WCHEN courses

educational television

special classes

programmed instruction

short-term training

- There are differences in educational preferences according to length of time in practice

  Of all the experience groups, those with 0 to 5 years of practice consistently show the lowest preference for all methods listed.

  Those M/LTs with 20 or more years of practice indicate the highest preference for all methods except short-term training courses, workshops, special classes, and WCHEN courses.

- State differences in preferences are minor, the most notable being:

  Nevada M/LTs show the highest indication of education need in six of the ten methods listed.

  Montana M/LTs show the lowest indication of education need in five of the methods.

C. SHORT TERM COURSE ATTENDANCE

Among the M/LTs, short-term training courses, demonstrations, workshops, and similar organized training programs are rated highly. There were conditions expressed as to course location, however.

- Outside local community

  More M/LTs would attend outside courses if their expenses were paid (66%), than would if they have to pay their own expenses (23%).

  Family responsibilities and lack of interest are the most frequently given reasons for inability to attend, even if all expenses were paid.

- Within local community

  More than three out of four M/LTs (78%) would attend continuing education programs in their own communities.

  Interest in local programs is uniformly high throughout the Region and within each state.

- Three techniques to encourage greater participation in continuing education are stressed by 75% or more of the M/LTs.

holding training programs closer to home.

more complete information about existing programs.

released time with no loss of salary.

- Desired frequency of course attendance

  Once a month is the frequency of course attendance preferred by a majority of the M/LTs (52%).

  The second ranking choice--every six months--is preferred by far fewer M/LTs (21%).

D. M/LT PREFERENCES IN TRAINING COURSE CONTENT

There are many factors that could be included in heart disease, cancer and stroke education. Three were selected for special emphasis in this survey. State responses show some variability, but the overall trends are similar to the Region trend as summarized below.

- Prevention

  Slightly more M/LTs (41%) indicate an interest in learning more about the prevention of cancer than of heart disease (39%) or stroke (37%).

- Treatment

  Cancer was also favored by more M/LTs (47%) as a subject for training in treatment than were heart disease (43%) or stroke (39%).

- Rehabilitation

  M/LT interest in rehabilitation training was highest for stroke (24%), next for heart disease (18%), and lowest for cancer (12%).

- Combined Training

  For all three disease categories as a whole, more ML/Ts (43%) are interested in training for treatment than they are for prevention (39%) or rehabilitation (18%).

E. CONSUMER HEALTH PROBLEM SUPPORT

Teaching and other support provided patients and their families in selected health problem areas is not considered to be "good" or "excellent" by a majority of the Mountain States medical/laboratory technologists.

- Not one of the nine problem areas is rated "good" or "excellent" by a majority of M/LTs.

  amputations and special dietary needs are highest in ratings, but by no more than 40% of the M/LTs.

  support provided in the area of bowel and bladder incontinence was rated "good" or "excellent" by the smallest number of M/LTs (31%).

- There is considerable variation from state to state in M/LT ratings

  In Nevada, 50% or more rate support as "good" or "excellent" in all areas except speech defects.

  Montana M/LTs give consistently lower ratings than the Region averages in all areas except speech defects.

  Greatest dissatisfaction with patient support procedures in all areas is expressed by M/LTs in Wyoming.

F. COMMUNITY HEALTH PROCEDURES

- Information to the public

  Less than half (48%) of the Mountain States M/LTs consider dissemination of information to the public concerning prevention, diagnosis, treatment, and rehabilitation of heart disease, cancer, and stroke conditions to be satisfactory.

- Inter-agency exchange of patient data

  About two-thirds of the M/LTs (68%) feel that current procedures in this area are adequate.

- Inter-departmental patient data exchange

  Nearly three out of four M/LTs (73%) feel that current procedures are satisfactory here.

VII. PROFILE OF THE MOUNTAIN STATES PHYSICAL THERAPIST

On the basis of analysis of selected characteristics, physical therapists (PT) in the Mountain States Region may be described as follows:

- They are in their mid-thirties

  On the average, they are about 36 years old.

  Two-thirds of them are between 28 and 44 years of age.

  Nevada PTs are older and Wyoming PTs are younger, on the average, than those in the other states.

- They have been practicing just over 10 years

  On a regional basis, the average PT has been practicing for 10.4 years and two-thirds of them fall within a range of from 4 to 17 years.

  Wyoming has the highest proportion of PTs with fewer than 10 years of practice, while Idaho and Nevada both have a majority of PTs with more than 10 years of practice.

- Nearly all of them belong to a state or national professional organization.

  For the Region, 94% report membership.

  State membership rates are consistent with Region.

- The clinical areas with which more than 9 out of 10 PTs in the Region and in each of the states come in most frequent contact are:

  stroke rehabilitation

  cerebral vascular accident

  peripheral vascular disease

- They are working for a variety of reasons, of which the most frequently mentioned are:

  sole support of family

  self support

  supplement family income

A. NEED FOR CONTINUING EDUCATION

In terms of responses indicating a need for continuing education in 18 specified clinical conditions of heart disease, cancer, and stroke:

- At least half of the PTs express the need for continuing education in all but one clinical area

  The range is from a high of over 85% (stroke rehabilitation, cerebral vascular accident, peripheral vascular disease) to a low of 45% (cancer of the genito-urinary tract).

  Of all PTs, those in Montana and Wyoming express the most need for training in all areas, while those in Nevada and Idaho express the least.

- There is an observable relationship between PT experience and expressed need for continuing education.

  Those PTs who have fewer than 5 years of active practice are well above the regional average in expressing need for education in 14 of the 18 areas.

  Those with more than 20 years of practice express the least need for education in nearly all areas.

B. PT PREFERENCES IN EDUCATION METHODS

Physical therapists have several avenues of access to continuing education some of which are used more than others. Still others might be used to a greater extent if they could be made more available.

- More than four out of ten PTs indicate the need for increased availability of six educational methods.

  educational television

  WCHEN courses

  workshops

  educational radio

  short-term training

  programmed instruction

- Less than 10% of the PTs indicate preference for two educational methods

  conventions/meetings

  professional books and journals

- There are differences in education preferences according to length of time in practice.

  Of all the experience groups, those with between 5 and 19 years of practice consistently show the highest preference in terms of needed educational methods.

  Both younger and older experience groups are generally at or below the regional average, with the older group consistently below.

- State differences in expression of need for unavailable education methods were minor, with some exceptions

  In Wyoming, more PTs expressed need for all methods than in any of the other states.

  In Idaho, proportionately fewer PTs expressed need for any of the methods.

C. SHORT-TERM COURSE ATTENDANCE

Among the physical therapists, short-term training courses, demonstrations, workshops, and similar organized training programs were rated highly. There were conditions expressed as to course location, however.

- Outside local community

  Just over half (51%) of the PTs would attend courses outside their own communities even if they had to pay their own expenses.

  Wyoming PTs are most willing to attend at their own expense, Montana and Nevada PTs least willing.

  Almost all PTs (94%) would attend outside courses if all their expenses were paid.

  Montana PTs are least willing of all to attend under either condition of expense payment.

Of the very few who would not attend even if expenses were paid, the reason most frequently given for inability to attend is lack of replacement at work.

- Within local community

  All responding PTs (100%) indicate that they would attend continuing education courses held in their own communities.

- Three techniques to encourage greater participation in continuing education are stressed by more than 70% of the PTs.

  holding training programs closer to home

  payment of expenses

  released time with no loss of salary

- Desired frequency of course attendance

  Nearly half (44%) of the PTs prefer a once-a-month training schedule.

  The next most preferred interval was every six months (29%).

D. PT PREFERENCES IN TRAINING COURSE CONTENT

There are many factors that could be included in heart disease, cancer and stroke education. Three were selected for special emphasis in this survey. State responses show some variability, but the overall trends are similar to the Region trend as summarized below.

- Prevention

  Although an area of interest to PTs, prevention ranks third in training preference in all disease areas.

- Treatment

  More PTs are interested in learning more about the treatment of these diseases than about prevention. Treatment ranks second.

- Rehabilitation

  By far the majority of PTs are interested primarily in continuing education in the area of rehabilitation of patients suffering from all of the diseases. Stroke rehabilitation they rank highest of all.

- Combined Training

  As noted, PTs express high interest in training in all three areas for all three diseases.

  Highest in expression of training interest by PTs is for rehabilitation; the disease category they select most for such training is stroke.

E. CONSUMER HEALTH PROBLEM SUPPORT

Teaching and other support provided patients and their families in selected health problem areas is not considered to be "good" or "excellent" by a majority of the Mountain States physical therapists.

- A majority of PTs rate three of the nine problem areas "good" or "excellent"

  special dietary needs (60%)

  paralysis (55%)

  colostomy (53%)

- Support was considered least satisfactory by PTs in two problem areas

  speech defects (32%)

  bowel and bladder (40%)

- Some minor state differences can be identified in the PT rating.

  In Wyoming, PTs rank each of the nine areas lower in the "good" or "excellent" scale than do PTs throughout the Region as a whole.

  The exact reverse is true for PTs in Idaho: they give all areas higher than average "good" or "excellent" ratings.

F. COMMUNITY HEALTH PROCEDURES

- Information to the public

  No more than 25% of the Mountain States PTs consider dissemination of information to the public concerning prevention, diagnosis, treatment, and rehabilitation of heart disease, cancer, and stroke conditions to be satisfactory.

- Inter-agency exchange of patient data

  About one-third (35%) of the PTs feel that current procedures in this area are adequate.

- Inter-departmental patient data exchange

  This is the only area involving dissemination of health information where most PTs (70%) feel that present procedures are satisfactory.

VIII. PROFILE OF THE MOUNTAIN STATES RADIOLOGIC/X-RAY TECHNOLOGIST

On the basis of analysis of selected characteristics, radiologic/X-ray technologists in the Mountain States Region may be described as follows:

- They are in their mid-thirties

  On the average, they are about 36 years old.

  Two-thirds of them are between 25 and 47 years

  Montana and Wyoming R/XTs, as a group, are younger than those in the other states.

- They have been practicing for nearly 12 years

  On a regional basis, the average R/XT has been practicing for 11.5 years, and two-thirds of them fall within a range of from 3 to 19 years.

  Over half of the R/XTs in Wyoming and Idaho have fewer than 10 years of practice.

- Most of them are members of a state or national professional organization

  For the Region, 80% report membership.

  For the states, membership rates vary from a high of 94% in Nevada to a low of 73% in Wyoming.

- In their clinical practice, most R/XTs come in most frequent contact with patients suffering from

  cancer of the gastro-intestinal tract

  congestive heart failure

  cancer of the genito-urinary tract

  myocardial infarction

  rheumatic heart disease

- They are working for a variety of reasons, of which those most frequently mentioned are

  sole support of family

  self support

  supplement family income

A. NEED FOR CONTINUING EDUCATION

In terms of responses indicating a need for continuing education in 18 specified clinical conditions of heart disease, cancer, and stroke:

- More than two-thirds of the R/XTs express the need for continuing education in all clinical areas

  The range is from a high of 84% for congestive heart failure and cerebral vascular accident to a low of 68% for stroke rehabilitation.

  Idaho R/XTs lead the other states in expression of need for training in 15 of the 18 clinical areas.

  Nevada R/XTs indicate the least educational need of all states in 16 of the 18 clinical areas.

- There is an observable relationship between R/XT experience and expressed need for continuing education

  Those R/XTs who have fewer than 5 years of active practice are well above the regional average of expressed need for education in each of the clinical areas.

  The under 5 years of practice group is also higher than other experience groups in expressing need for education in all areas.

B. R/XT PREFERENCES IN EDUCATION METHODS

Radiologic/X-ray technologists have several avenues of access to continuing education, some of which are used more than others. Still others might be used to a greater extent if they could be made more available.

- More than four out of ten R/XTs indicate the need for increased availability of six educational methods

  short-term training

  WCHEN courses

  programmed instruction

  workshops

  educational television

  special classes

- The smallest number of R/XTs (8%) indicate preferences for two educational methods:

  professional books and journals

  conventions/meetings.

- There are differences in education preferences according to length of time in practice.

  Of all the experience groups, those with 0 to 5 years of practice consistently show the highest preference in terms of needed educational methods.

Middle and older experience groups both show relatively high high preferences for all methods, with the older (more than 20 years of practice) group more apt to choose educational radio and conventions/meetings than are the other groups.

- State differences in expression of need for unavailable education methods were minor, but

  In Montana, proportionately fewer R/XTs expressed need for any of the methods.

C. SHORT-TERM COURSE ATTENDANCE

Among the radiologic and X-ray technologists, short-term training courses, demonstrations, workshops, and similar organized training programs were rated highly. There were conditions expressed as to course location, however.

- Outside local community

  More R/XTs would attend outside courses if their expenses were paid (75%) than would if they must pay their own expenses (25%).

  Family responsibilities and lack of available replacement are the most frequently given reasons for inability to attend, even if all expenses were paid.

- Within local community

  More than four out of five R/XTs (81%) would attend continuing education programs held in their own communities.

  Interest in local programs is uniformly high throughout the Region and within each state.

- Four techniques to encourage greater participation in continuing education are stressed by 70% or more of the R/XTs:

  holding training programs closer to home.

  payment of expenses

  more complete information about existing programs

  released time with no loss of salary.

- Desired frequency of course attendance

A majority of the R/XTs (54%) prefer a once-a-month training course schedule.

Other schedule intervals (every six months, every year) and preferred by no more than one out of five R/XTs.

D. R/XT PREFERENCES IN TRAINING COURSE CONTENT

There are mnay factors that could be included in heart disease, cancer and stroke education. Three were selected for special emphasis in this survey. State responses show some variability, but the overall trends are similar to the Region trend as summarized below.

- Prevention

More R/XTs (43%) indicate an interest in learning more about the prevention of cancer than of heart disease (40%) or stroke (36%).

- Treatment

Cancer and heart disease are favored by more R/XTs (39% for each) as a subject for training in treatment than is stroke (34%).

- Rehabilitation

R/XT interest in rehabilitation training is highest for stroke (32%), next highest for heart disease (21%), and lowest for cancer (19%)

- Combined Training

For all three disease categories as a whole, more R/XTs are interested in training for prevention (39%) and treatment (38%) than for rehabilitation (23%).

More R/XTs are interested in all forms of training for cancer (38%) than for heart disease (34%) or stroke (29%).

E. CONSUMER HEALTH PROBLEM SUPPORT

Teaching and other support provided patients and their families in selected health problem areas is not considered to be "good" or "excellent" by a majority of the Mountain States radiologic and X-ray technologists.

- Not one of the nine problem areas is rated "good" or "excellent" by a majority of the R/XTs.

  Amputations and speech defects are highest in ratings, with 49% for each.

  Support in the area of bowel and bladder incontinence is rated "good" or "excellent" by the smallest number of R/XTs (34%).

- There is some variation from state to state in R/XT ratings.

  Greatest dissatisfaction with patient support procedures in all areas is expressed by R/XTs in Wyoming.

  R/XTs in Montana and Nevada give somewhat more "good" and "excellent" ratings than do those in Idaho and Wyoming.

F. COMMUNITY HEALTH PROCEDURES

- Information to the public

  Just over half (52%) of the Mountain States R/XTs consider dissemination of information to the public concerning prevention, diagnosis, treatment, and rehabilitation of heart disease, cancer, and stroke conditions to be satisfactory.

- Inter-agency exchange of patient data

  About 55% of the R/XTs state that current procedures in this area are adequate.

- Inter-departmental patient data exchange

  More than two-thirds of the R/XTs (68%) feel that current procedures are satisfactory here.

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PART TWO

SURVEY DESIGN AND ANALYSIS PLAN

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PART TWO

SURVEY DESIGN AND ANALYSIS PLAN

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I. BACKGROUND OF THE REPORT

The Mountain States Regional Medical Program (MS/RMP) is a cooperative planning and operational program embracing the health professionals and the citizens whom they serve in the states of Idaho, Montana, Nevada and Wyoming. It is funded under the provisions of Title IX, a 1965 amendment to the Public Health Services Act (Public Law 89-239), which authorizes grants to assist in planning, establishing, and operating medical programs to combat heart disease, cancer, stroke, and related diseases.

The MS/RMP has recognized the critical importance, if sound planning is to be done, of developing a comprehensive assessment of the facilities, educational needs, and personnel needs throughout the Region. A survey of the needs as seen by the health professionals in the Region was one of the means selected for obtaining this information. This report, the second in a series that embraces all segments of the Region, addresses those areas of the survey having most direct bearing on educational needs and patterns of patient management. Its focus is the result of earlier analyses of the health professional data.

The initial analytical efforts performed by the Mountain States Regional Medical Program (MS/RMP) staffs and System Development Corporation (SDC) considered the data from a four-state regional perspective. These analyses have produced a series of internal Technical Reports and an MS/RMP Special Publication, Initial Analysis of Health Professional Survey: Mountain States Regional Medical Program: (WICHE), SDC TM-4050, 16 September 1968. The latter report has been widely distributed throughout the Region and sent to other RMPs and selected national health agencies. Analytic reviews of these reports have clearly established that health professionals throughout the Region express consistent need for educational programs and provide suggestive information concerning referral practices for patients with complicated management problems. Since the initial reports were prepared on a regional basis, it was not possible to specify the extent to which needs were uniform for all professionals of a given type throughout the Region.

It is evident that several factors will have an impact on program development: knowing where the need is; knowing what subpopulations of the medical profession express the need; and knowing what circumstances or conditions will enhance or inhibit the success of a particular approach to meeting the need. The present report examines selected question responses on the lowest practical geographic level, in terms of particular occupational factors and, inferentially, social factors. From this analysis it should be possible to identify and describe the type of professional who needs particular programs and the general environmental factors associated with the practice of this profession. The report should also help to identify types of educational programming most likely to succeed and the special approaches to the conduct of educational programs that will be the most efficient.

II. ANALYSIS OBJECTIVES

Reference has been made to a health professional survey; in actuality a separate survey was conducted on each of eight health groups:

Physicians*
Dentists
Administrators
Registered Nurses
Licensed Practical Nurses
Medical/Laboratory Technologists
Physical Therapists
Radiologic/X-Ray Technologists

This report is organized to permit consideration of the analytical content areas as they pertain to each of the above professional groups. The data are interpreted and described at the lowest practical identifying level. The object of the analysis is:

- To recognize differences within professional groups as related to responses.
- To recognize differences within professional groups as related to geographical location.
- To determine the practicality of any proposed solution to professional needs and recommendations based on the uniformity or lack of uniformity of responses.
- To relate the needs and recommendations from one area of a state to the state as a unit and, in turn, to the entire Region.

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* The physician survey was addressed to Doctors of Medicine

The report provides both descriptive and problem-oriented data for each professional group surveyed. To the extent that the survey instrument permitted obtaining the information, the professional's needs in educational programming are presented by

- What is needed?
- Who needs it?
- Where are they?
- Does their practice or professional job affect the need?
- What have they experienced before?
- What do they want?
- What don't they want?
- What are the inhibitors to meeting their needs?

In the referral area, the questions pertained only to the practicing physician and dentist and provide answers to the general questions

- Who are they?
- Where are they?
- Does their practice affect referral?

The sections of the report pertaining to each professional group follow a common organizational structure to facilitate comparisons among groups. The presentation of data, whether in tabular or graphic form, is also uniform to the extent that the data themselves permit. In some instances, notably where the responses of the several professional groups to similar questions have been ranked, the data one presented in common content format rather than in rank order for each of the groups. This, too, has been done to provide ease of cross-reference and comparison from group to group. In such cases, rankings are indicated, but the data are not rank-ordered.

III. SURVEY DESIGN

This report presents information in descriptive, statistical and summary form pertaining to the responses of selected health professionals to specific questions in several health educational, facilities and patient service areas. Several thousand health professionals who live and practice their professions in Idaho, Montana, Nevada, and Wyoming provided the answers to questions which make up the pool of information for analysis and reporting. These answers are organized in a form which permits automated data processing in a variety of ways; this report considers the data from only a few of the possible ways.

As noted before, eight different health professional groups were asked to participate in the survey. For six of the eight groups an effort was made to provide all members of each group with the opportunity to participate. For the other two groups--Registered Nurses and Licensed Practical Nurses--sampling was used because of the large number of members in each group. The number queried and the number who responded are shown in Table (2)-1 for the Region as a whole. Similar summaries by state for each professional group are included in the separate discussions in Part Three.

Table (2)-1. Summary of Responses to MS/RMP Survey

Professional Description	Total Number Mailed Out	USABLE RETURNS RECEIVED			Percent
		Active	Inactive(1)	Total	
Physician	2,136	999	NA	999	46.8
Dentist	1,010	625	NA	625	61.9
Administrator -Hospital -Nursing Homes, etc.	280	131 55(2)	NA	186	66.4
Nurse	1,405	491	206	697	49.6
LPN	568	212	75	287	50.5
Med/Lab	734	304	107	411	56.0
PT	135	89	15	104	77.0
Rad/X-ray	581	197	88	285	49.1
TOTALS	6,849	3,103	491	3,594	52.5

(1) "Inactive" professional personnel were not included in the initial analysis described in this report.

(2) Administrators of institutions other than hospitals (e.g., nursing homes, extended care facilities, etc.) were not included in the initial analysis described in this report.

The overall response was gratifying, and sufficiently large to allow the documenting of useful conclusions pertaining to the entire group. It should be noted, however, that the numbers of respondents shown in these tables do not necessarily reflect the numbers actually used in the final computations. The reason for this is simple: not all individuals responded to all questions or to all parts of same questions. As a result, variation in the number of responses to different questions is inevitable. The amount of variation is slight, however, and has no appreciable effect at the level of analysis employed. The only possible effect of this situation, or of the smallness of some of the samples when broken down into subgroups (such as, for example, study zones within states), is to limit the analysis depth in such cases.

Throughout the analysis of the questionnaire data, occasional references are made to the presence or absence of statistically significant differences in the responses among the states. In making these determinations, a standard statistical chi-square test was used. Responses to every questionnaire item were separately tabulated for each of the four states; these scores were then combined into a single regional distribution. The chi-square test is used as a means of comparing the proportion of responses for an individual state with the distribution of scores for the region as a whole. If the chi-square test is not statistically significant, then it can be said that there are no appreciable differences among the states. That is, each state's score was similar to the regional totals based on all four states. If, however, the chi-square test is statistically significant, one may conclude that the responses made by the residents of one or more states are appreciably different from the regional average. A distinction is also made between a chi-square score varying between .01 and .05, which is said to be "significant", and a score of less than .01, which is interpreted as "very significant".

IV. REGION/STATE STUDY ZONES

To fulfill the broad objectives enumerated in the preceding section, the data in this report are organized geographically as well as professionally. Three levels of geographic analysis have been used: Region (all four states), state, and areas within Region/state appropriate for the particular analytical or response information being presented. The areas within the states are designated as "study zones." These study zones consist of two or more counties within a state and have been established based on economic, social, geographical, and medical service area considerations. While no attempt is made in this report to relate survey aggregated study zone data to any characteristic of the study zones, the reader who is familiar with specific characteristics of the participating states may find such comparisons useful. Figures (2)-1 through (2)-2, -3, -4 describe the study zones for each of the states. The levels of analysis for the data will give the reader an understanding of how the particular professional group responded, and how subgroups or other special factors contributed to these responses.

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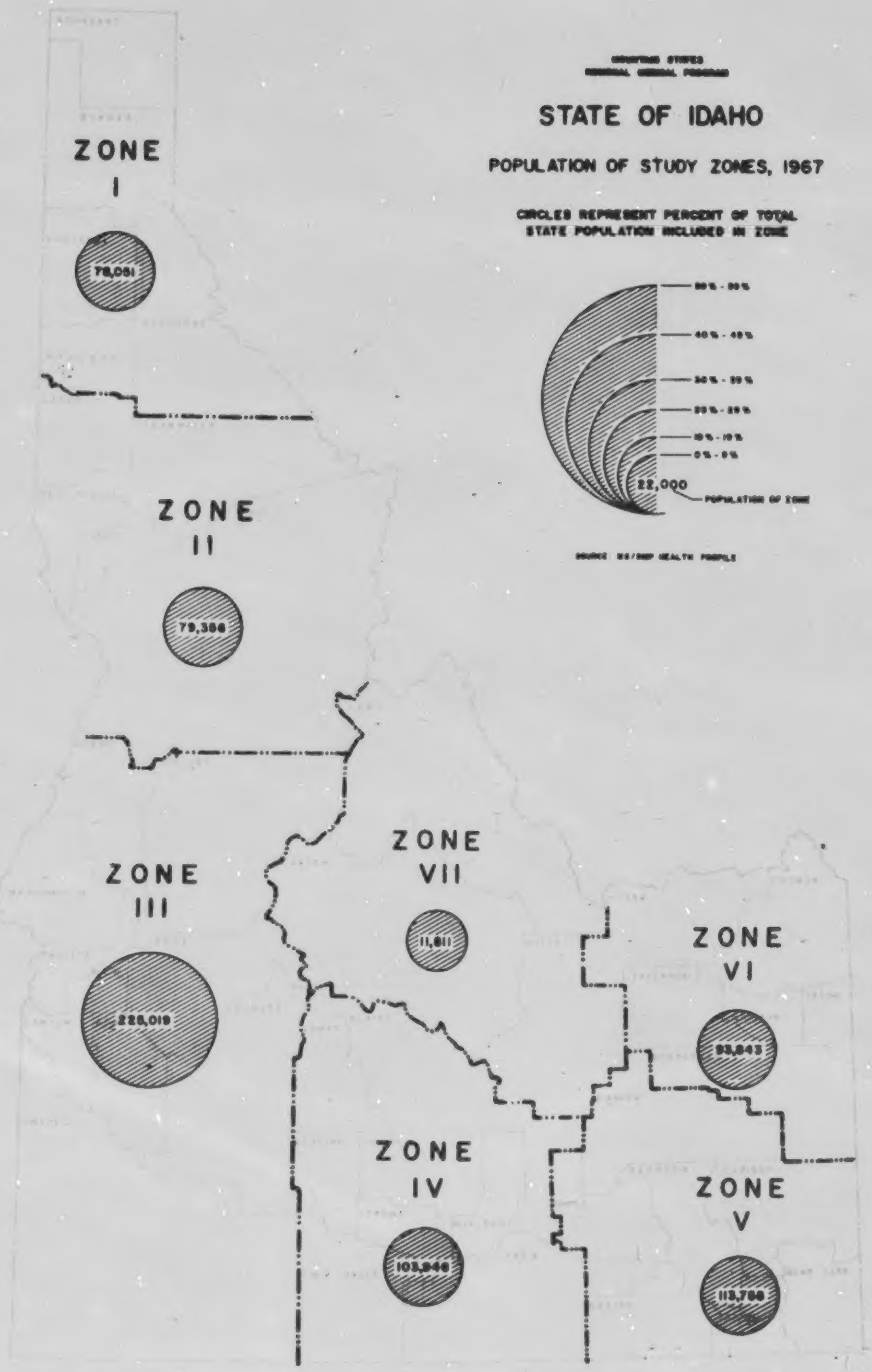
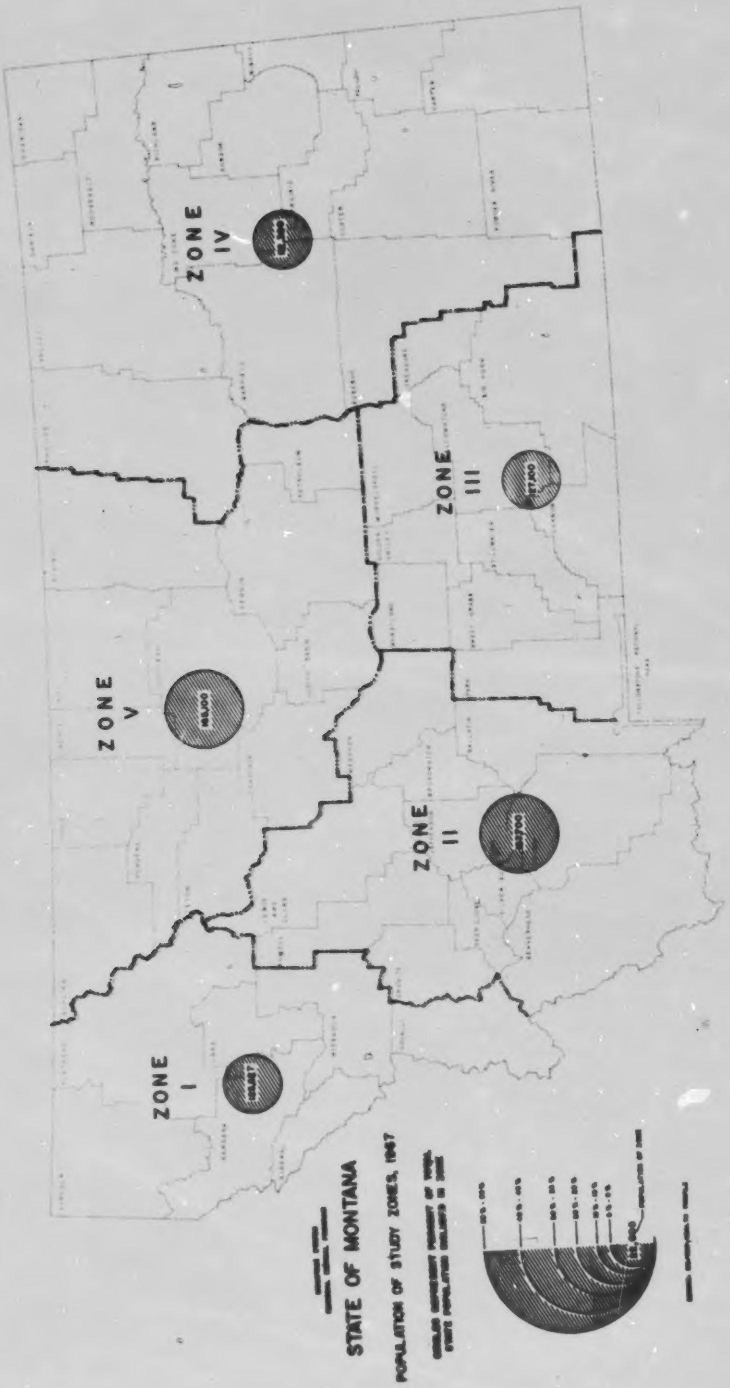

STATE OF IDAHO
POPULATION OF STUDY ZONES, 1967
CIRCLES REPRESENT PERCENT OF TOTAL STATE POPULATION INCLUDED IN ZONE
50% - 59%
40% - 49%
30% - 39%
20% - 29%
10% - 19%
0% - 9%
22,000
POPULATION OF ZONE
ZONE I
78,051
ZONE II
79,386
ZONE III
228,019
ZONE VII
11,811
ZONE VI
93,843
ZONE IV
103,946
ZONE V
113,756

Figure (2)-1. Idaho Study Zones


ZONE I
ZONE II
ZONE III
ZONE IV
ZONE V
STATE OF MONTANA
POPULATION OF STUDY ZONES, 1967

(Figure (2)-2. Montana Study Zones

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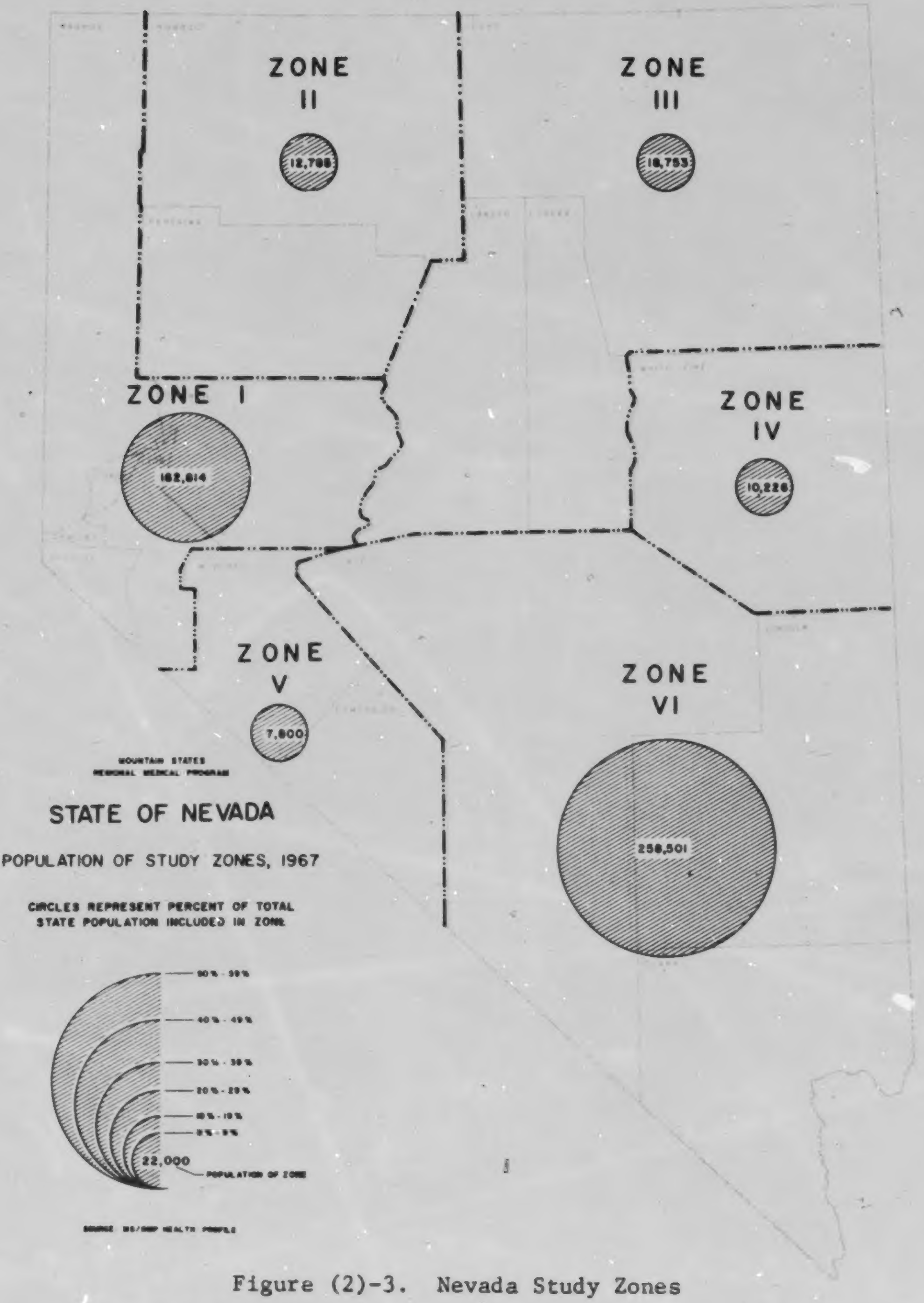
ZONE II
12,788
ZONE III
18,753
ZONE I
162,614
ZONE IV
10,226
ZONE V
7,800
ZONE VI
258,501
MOUNTAIN STATES
REGIONAL MEDICAL PROGRAM
STATE OF NEVADA
POPULATION OF STUDY ZONES, 1967
CIRCLES REPRESENT PERCENT OF TOTAL STATE POPULATION INCLUDED IN ZONE
50% - 59%
40% - 49%
30% - 39%
20% - 29%
10% - 19%
0% - 9%
22,000
POPULATION OF ZONE
SOURCE: MS/RMP HEALTH PROFILE

Figure (2)-3. Nevada Study Zones

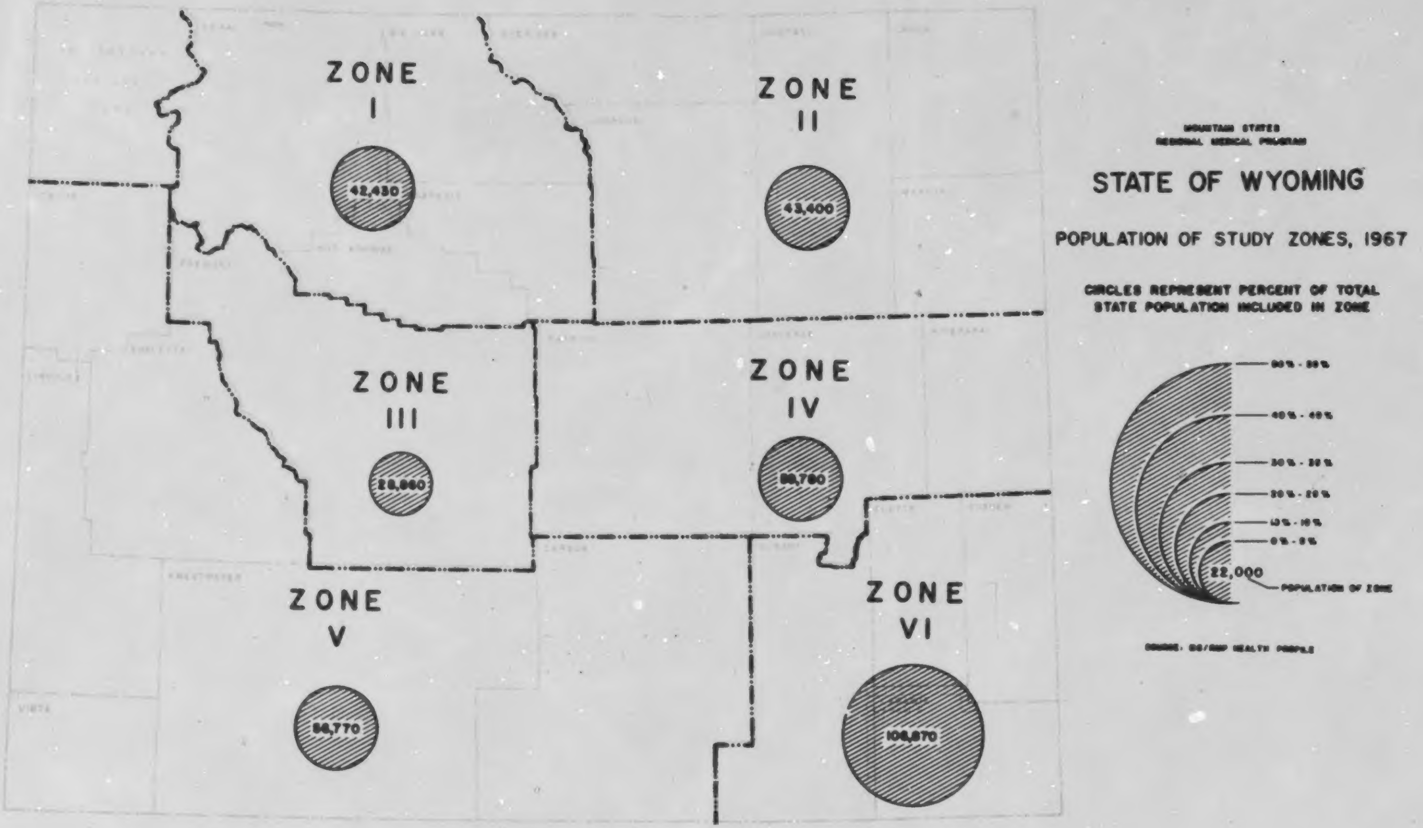
MOUNTAIN STATES
REGIONAL MEDICAL PROGRAM
STATE OF WYOMING
POPULATION OF STUDY ZONES, 1967
CIRCLES REPRESENT PERCENT OF TOTAL
STATE POPULATION INCLUDED IN ZONE
22,000
POPULATION OF ZONE
ZONE I
42,430
ZONE II
43,400
ZONE III
28,860
ZONE IV
56,760
ZONE V
56,770
ZONE VI
106,870

Figure (2)-4. Wyoming Study Zones

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PART THREE

MOUNTAIN STATES HEALTH PROFESSIONALS

I. PHYSICIAN

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A. INTRODUCTION

1. Sample Size and Distribution

Just under half (47%) of the more than 2,000 practicing physicians in the four-state Mountain States Region responded to the MS/RMP questionnaire. The response rate was highest in Wyoming (59.8%) and lowest in Nevada (32.3%). Table I-1 shows the response numbers and rates for each state and the Region. It also shows how the actual sample (998 physicians) is distributed among the states. The analysis and findings described in this report are based on this sample and distribution.

Table I-1. Physician Sample Size for Region and States

STATE	TOTAL CONTACTED		TOTAL RESPONSES (SAMPLE)		
	No. of Contacts	Region Proportion (%)	No. of Responses	Response Rate (%)	Region Proportion (%)
Idaho	620	29.0	302	48.7	30.3
Montana	754	35.3	361	47.9	36.2
Nevada	439	20.6	142	32.3	14.2
Wyoming	323	15.1	193	59.8	19.3
Region	2,136	100.0	998	46.7	100.0

2. Highlights of the Analysis

- More than one half of the Mountain States physicians expressed a need for education in all heart disease, cancer, and stroke clinical areas.
- Physicians who have been in practice for more than ten years feel the need for education to a greater extent than do those in practice for fewer than ten years.
- Proportionatly more general practitioners express a need for education than do specialists.

- Medical television and radio, group discussions, medical school lectures, and demonstrations are educational methods most desired by physicians.

- Physicians generally feel that teaching and support provided patients and their families in selected health problems are "good" or "excellent", although there are exceptions for certain problems (paralysis, bowel and bladder incontinence, and speech defects). There are also differences among the states; the lowest ratings in all areas are given by Wyoming physicians, the highest by those in Idaho and Montana.

- A majority of the Mountain States physicians feel that the dissemination of health information to the public and procedures for inter-agency exchange of patient information are satisfactory.

B. SELECTED PERSONAL AND PROFESSIONAL CHARACTERISTICS

In this section, a partial profile of the Mountain States physician is drawn. The characteristics selected in developing this profile are those considered of particular relevance to major problem areas examined analytically in subsequent sections.

1. Age

Average age and age ranges are given below for the Region as a whole and for each of the four states.

a) Region. For the Region as a whole, the average age of physicians is nearly 47 years (46.6), and two-thirds of the 979 physicians who reported their ages are between 36 and 57 years. There are few very young or very old physicians in the Mountain States; almost all (94.0%) are between 30 and 70 years of age. In general, the distribution of physicians according to age is fairly uniform throughout the entire region. There are, however, some notable exceptions. These will be pointed out in the discussion of state distributions that follows.

b) Idaho. Idaho physicians average 48 years of age, slightly above the regional average. This is primarily because a higher proportion (40.3%) of Idaho physicians are 50 years of age or over, as compared to the 35.1% throughout the Region who are in this age grouping. Approximately half of the Idaho physicians 60 years of age or over are found in Zone 3. In this connection, however, it should be noted that these 20 older physicians represent only 14%

of the 139 physicians reporting from Zone 3, and that these 139 Zone 3 physicians represent nearly half of all the Idaho physicians responding to the questionnaire. With the exception of this zone, and also Zone 7 (with only three responding physicians) the number of responding physicians in the other five zones ranges from 27 to 34.

c) Montana. At an average age of 45.4 years, the Montana physician tends to be somewhat younger than physicians throughout the Region as a whole. A slightly higher proportion of the 365 responding Montana physicians (68.0%) are under 50 years of age than is the case for the Region as a whole (64.9%). Moreover, almost all of the Region's physicians who are under the age of 29 (17 of 23) are found in Montana. The Montana zone that exerts the greatest influence toward lowering the average age of Montana physicans (Zone 4) is also the zone with the fewest number of respondents (40). Distributions are more uniform in the other four Montana zones, both in terms of total number of responding physicians and in terms of age.

d) Nevada. This is the state that deviates most from the regional norm. It is the only state where there are no responding physicians under the age of 29 or over the age of 70 years. The average age of Nevada physicians is 46.2, and two-thirds of them are between 35.7 and 56.7 years of age. It is difficult to make zonal comparisons in Nevada, mainly because 126 of the total of 137 physicians come from two of the six Nevada zones (Zones 1 and 6). Two zones (Zones 4 and 5) had only one responding physician each.

e) Wyoming. Wyoming physicians average 47.0 years of age, and two-thirds of them are between 36.7 and 57.1 years of age. Internal distributions are fairly consistent with these figures, with certain very minor exceptions: Zones 4 and 5 have slightly higher proportions of younger physicians (under the age of 39 years), and Zones 3 and 6 have slightly higher proportions of older physicians (over 60 years of age).

2. Years of Active Practice

Regional and state distributions of Mountain States physicians in terms of years of active practice, as an index of relative experience, are given below for the Region and each of the states:

a) Region. Of the 974 physicians responding to this question, approximately one-fourth (25.6%) say they have been in active practice for less than ten years. The average Mountain States physician has been working at his profession for approximately 18 years, and two-thirds of all physicians fall within a range of 7.5 and 28.5 years of active practice. It is also interesting to note that 31 of all the responding physicians (approximately 3%) say they are still active after 40 years of practice. Eight of these physicians are still active after 50 years of practice.

b) Idaho. Of the 295 Idaho physicians responding to this question, slightly less than one out of four have been in practice less than ten years. On the average, the Idaho physician has been in active practice for 18.7 years, and two-thirds of them fall within a range from 8.1 to 29.2 years of active practice.

c) Montana. There were 355 responding physicians in Montana. Of these just over one out of four (27.3%) has been in practice for less than ten years. The average Montana physician has been in practice for 17.4 years, and two-thirds of them fall within the range from 6.3 to 28.4 years of active practice.

d) Nevada. Of the 137 Nevada physicians responding to this question, more than one out of four (28.4%) has been practicing for less than ten years. The average Nevada physician has been practicing for about 17.7 years, and two-thirds of them fall within the range from 7.0 to 28.[illegible] years of active practice.

e) Wyoming. There were 187 physicians in Wyoming who responded to this question. Fewer than one out of four (23.5%) has been in practice for less than ten years. On the average, the Wyoming physician has been in practice for 18.4 years, and two-thirds of them fall within the range from 7.8 to 29.1 years of active practice.

3. Type of Practice

Each physician was asked to describe his practice as "general" or "specialized". A total of 939 physicians responded to this question. The regional and state distributions of their answers follow:

a) Region. For the Region as a whole, a majority of the physicians (57.7%) consider that their practice is specialized. There is, however, considerable variation from state to state within the Region and from zone to zone within each of the states. Thus, while in some zones within states as many as three out of four physicians consider themselves to be in specialized practice, in some other zones in these same states nine out of ten physicians consider themselves to be in general practice. Highlights of these distributions and variations are given below.

b) Idaho. Of all the zones in all the states throughout the Region Idaho's Zone 6 is the extreme case of specialization. Here 24 of 29 responding physicians (82.8%) consider themselves to be in specialized practice. On the other hand, only 3 of the 27 physicians in Zone 1 and 14 of the 38 physicians in Zone 2 consider their practices to be specialized.

c) Montana. With the exception of Zone 4, where only 14 of the 39 responding physicians consider their practices to be specialized, the distribution within the state was close to that for the Region as a whole.

d) Nevada. As compared with the rest of the Region, a higher proportion of physicians in the State of Nevada consider their practices to be specialized: of the 136 physicians responding from Nevada, seven out of ten (69.9%) indicate that they are specialists. It should be noted, of course, that all but ten of Nevada's responding physicians are to be found in Zones 1 and 6. In each of these zones about 75% of the physicians consider their practice to be specialized. Of the six physicians reporting form Zones 2, 4, and 5, all consider themselves to be general practitioners.

e) Wyoming. By far the majority of physicians in three of Wyoming's six zones consider themselves to be general practitioners: only 4 of the 21 physicians in Zones 1, 3 of the 13 physicians in Zone 3, and 3 of the 20 physicians in Zones 5 consider themselves to be specialists.

4. AAGP Membership

There were 427 Mountain States physicians who responded to the question concerning membership in the American Association of General Practitioners (AAGP). Of this number, approximately half (51.1%) indicate that they hold membership in the AAGP. This same proportion holds consistently for all of the states within the Region and for almost all of the zones within each of the states. Montana has the highest proportion (52.6%) and Wyoming the lowest proportion (48.4%). There is only one zone that differs markedly from this distribution: in Montana's Zone 5, 24 of 31 responding physicians (77.4%) indicate that they are members of the AAGP.

5. Board Certification

Of the 462 Mountain States responding physicians who consider themselves to be in specialized practice, 405 (87.7%) also indicate that they are board certified. With very few exceptions, this proportion is fairly uniform from state to state and from zone to zone within each of the states. The major exceptions are:

a) Idaho. In Zone 2, only 9 of 13 specialists indicate Board Certification (69.2%).

b) Montana. In Zone 2, 30 out of 40 specialists (75.0%) claim Board Certification, and in Zone 4, 8 out of 13 (61.5%) claim such certification.

6. Nature of Clinical Practice

Each Mountain States physician was asked to describe his clinical practice in terms of its relationship to the care of patients suffering from heart disease, cancer, and stroke. Eighteen specific clinical conditions were listed: seven relating to heart disease, three relating to stroke, and eight relating to cancer.

Each of these clinical conditions is listed below, and is further referred to in the tables and figures associated with this discussion:

- Heart Disease

  congestive heart failure
  cardiac arrhythmias
  hypertensive cardiovascular disease
  myocardial infarction
  rheumatic heart disease
  rheumatic fever
  congenital heart defect

- Stroke

  cerebral vascular accident
  peripheral vascular disease
  stroke rehabilitation

- Cancer
  cancer of gastro-intestinal tract
  cancer of genito-urinary tract
  cancer of skin
  cancer of respiratory tract
  cancer of central nervous system
  cancer of oral cavity, head and neck
  cancer of breast
  lymphoma and leukemia

a) Region. In round numbers, approximately 750 Mountain States physicians gave responses to each of the 18 clinical condition

Table I-2. Clinical Conditions Observed in Physicians' Practice

REGION RANK	CLINICAL CONDITION	REGION	IDAHO	MONTANA	NEVADA	WYOMING
--	Do not work in clinical areas	0.2%	0.7%	0.0%	0.0%	0.0%
5	Congestive heart failure	71.7	73.7	71.7	61.5	75.0
6	Cardiac arrhythmias	71.6	72.0	72.7	63.5	73.8
3	Hypertensive cardiovascular disease	72.4	73.1	72.4	62.8	77.0
10	Myocardial infarction	66.1	64.8	67.7	58.5	69.6
4	Rheumatic heart disease	72.4	74.8	73.4	63.2	72.8
8	Rheumatic fever	70.0	72.4	70.9	58.5	71.9
16	Congenital heart defect	57.0	56.5	61.8	50.0	52.9
7	Cerebral vascular accident	71.3	70.6	72.0	66.7	73.9
1	Peripheral vascular disease	79.5	76.6	81.7	76.0	81.5
13	Stroke rehabilitation	59.9	61.9	60.5	55.8	58.9
9	Cancer of gastro-intestinal tract	66.8	66.0	72.6	60.2	61.3
14	Cancer of genito-urinary tract	59.9	59.0	63.9	57.4	55.4
2	Cancer of skin	72.5	71.8	74.9	64.0	74.4
15	Cancer of respiratory tract	57.8	56.1	60.1	58.5	55.3
18	Cancer of central nervous system	42.3	41.6	46.3	39.4	37.6
17	Cancer of oral cavity, head and neck	54.6	54.8	58.8	52.0	48.4
11	Cancer of breast	64.4	63.0	69.8	57.1	61.3
12	Lymphoma and leukemia	64.4	64.5	68.2	56.1	62.4

categories. Throughout the Region, the condition seen by most physicians is peripheral vascular disease, with nearly eight out of ten (79.5%) of the responding physicians indicating that this disease is a part of their clinical practice. The clinical condition encountered by the fewest physicians in the Mountain States is cancer of the central nervous system; only about four out of ten (42.3%) of the responding physicians indicate that they have treated patients with this condition.

On a purely statistical basis, and in terms of the specified 18 clinical conditions, the distribution of clinical practice on the part of Mountain States physicians is quite uniform throughout the Region and among the states. In general, the regional average tends to be midway between the highest and the lowest proportionate rankings in each case. There are some exceptions, however, and the more important of these will be discussed below on a state basis.

b) Idaho. In general, the responses of the Idaho physicians parallel the regional average for all of the 18 specified conditions. Compared with the other three states, a slightly higher proportion of Idaho physicians report seeing patients with rheumatic heart disease, rheumatic fever, and patients who require assistance in the area of stroke rehabilitation.

c) Montana. Montana physicians, also, are quite close to the regional average for most of the clinical conditions. However, proportionately more Montana physicians report seeing patients suffering from each of the cancer conditions than do physicians in any of the other three states. Montana also has a greater proportion of physicians seeing patients with congenital heart defect and peripheral vascular disease than any of the other states. It should be noted, however, that these differences are not large in any of the cases.

d) Nevada. Physicians in Nevada, as a group, are the least likely to have patients with the specified clinical conditions in the fields of heart disease, cancer, and stroke. In 14 of the 18 clinical conditions, they rank lowest of all the states. The four exceptions are: cancer of genito-urinary tract, cancer of the respiratory tract, cancer of the central nervous system, and cancer of oral cavity, head, and neck. In these they approach the regional average.

e) Wyoming. Wyoming physicians are lowest, proportionately, in each of the four clinical conditions not claimed by Nevada. However, unlike the Nevada physicians, there are five disease categories in which Wyoming physicians are at the top of the list: congestive heart failure, cardiac arrhythmias, hypertensive cardiovascular disease, myocardial infarction, and cerebral vascular accident. Again, it should be noted that these highs and lows are not great and that, in general, Wyoming physicians follow very closely the pattern prevalent throughout the entire Region in terms of their clinical experience.

f) Summary. For only one disease category, cancer of the gastro-intestinal tract, is there any really significant distinction in the distribution of clinical practice among the states. In this case, a higher proportion of the physicians in Montana report seeing patients with this disease than do physicians for the Region as a whole (72.6% to 66.8%). A summary of the distribution of Mountain States physicians with respect to their clinical practice concerning heart disease, cancer, and stroke is included in Table I-2.

C. NEED FOR CONTINUING EDUCATION

Among the factors of importance in the design of a successful program of continuing education for physicians is a reasonably accurate knowledge of demand--the number and distribution of physicians within the Region and within each of the states who themselves express a need for continuing education. A factor of equal importance is the specific content of a continuing education program--the particular heart disease, cancer, and stroke conditions about which the physicians themselves express the greatest need for additional information. Accordingly, the Mountain States physicians were requested to estimate their need for assistance in keeping abreast of changes in the care of patients suffering from any of the 18 clinical problems related to heart disease, cancer, and stroke. In this section, the responses of the Mountain States physicians will be examined to show not only the gross magnitude of need for continuing education in each of the clinical areas, but also the relationship, if any, between expression of need by the physician and selected other characteristics of the physician.

1. Expressed Need

In responding to this question, physicians could evaluate their own need for continuing education in each of the clinical areas by checking one of three possible choices: strong need, moderate need, no need. For analytic purposes, those expressing strong and moderate need have been grouped together. In this way, it is possible to draw a more clear cut distinction between the group of physicians who indicate some need for continuing education and those who indicate no need at all. Table I-3 is a summary table showing the proportion of respon-

Table I-3. Need for Continuing Education in Clinical Conditions As Reported by Physicians

REGION RANK	CLINICAL CONDITION	REGION	IDAHO	MONTANA	NEVADA	WYOMING
17	Congestive heart failure	51.9%	55.3%	48.0%	47.1%	57.3%
4	Cardiac arrhythmias	67.3	66.4	68.6	61.1	70.4
14	Hypertensive cardiovascular disease	58.9	58.7	56.9	53.4	66.5
13	Myocardial infarction	59.2	58.4	59.6	53.9	63.1
16	Rheumatic heart disease	55.7	59.5	55.0	49.5	50.9
18	Rheumatic fever	50.7	52.9	50.2	44.3	53.0
3	Congenital heart defect	67.3	69.8	69.1	57.0	67.8
10	Cerebral vascular accident	62.4	60.7	61.3	55.1	72.0
2	Peripheral vascular disease	67.8	64.7	67.6	65.1	74.3
5	Stroke rehabilitation	65.4	62.7	65.3	64.8	70.5
12	Cancer of gastro-intestinal tract	60.9	62.2	60.5	54.6	64.6
7	Cancer of genito-urinary tract	64.2	65.5	62.5	60.8	68.8
15	Cancer of skin	57.1	60.2	58.0	47.3	58.3
8	Cancer of respiratory tract	63.2	63.7	62.8	57.0	67.5
11	Cancer of central nervous system	61.3	63.9	59.2	52.9	67.5
6	Cancer of oral cavity, head and neck	65.2	65.8	66.7	56.5	67.5
9	Cancer of breast	63.2	64.4	62.3	57.9	66.9
1	Lymphoma and leukemia	71.9	73.8	71.2	66.4	74.5

ding physicians, by Region and by state, who expressed some degree of need for continuing education in each of the 18 clinical condition areas. The regional rank position of each of these clinical conditions is also shown in this table, in order to facilitate Region-state comparisons. Since not all physicians responded in all 18 clinical condition question areas, there is some variance in the total number of responses from condition to condition. However, the variation is small and should be considered negligible.

a) Region. Examination of the figures contained in Table I-3 indicates quite clearly that at least half of the physicians who responded to this question express a need for continuing education in all 18 of the clinical areas listed. The clinical area that the Mountain States physicians rank highest is that of lymphoma and leukemia. This highest ranking was found to be consistent not only throughout the Region as a whole but in each of the four states. Specifically, for the Region as a whole, just over seven of every ten responding physicians (71.9%) indicate some need for continuing education in the clinical condition. At the other end of the scale, the disease condition in which the fewest physicians throughout the Region express a need of continuing education is rheumatic fever. While the need for assistance in keeping up with advances in this disease area ranked 18th for the Region as a whole, and either 18th or 17th for the four states, it should be emphasized that even here five out of ten physicians on a regional basis (50.7%) do express a need for continuing education in rheumatic fever.

Further analysis of the responses to this question can assist in identifying specific geographic areas (zones) within each of the states where the need for continuing education in any or all of the designated clinical conditions appears to be greater. The results of this analysis are summarized in Table I-4. The first column shows, in rank order for the Region, the regional average for each of the 18 clinical conditions. For each state, the overall state average is given, and for each zone, the actual number of physicians who express a need for continuing education in the specific clinical area. Italicized figures indicate in that zone, for the specific disease condition, a higher proportion of physicians than the state average indicates a need for continuing education. The patterns produced by these italicized numbers is one that may help in identifying where, in each of the states, the need for continuing education is to be found, as well as in suggesting the content for programs of continuing education most appropriate to particular locations.

Table I-4. Need for Continuing Education in Clinical Conditions, According to Study Zone, As Reported by Physicians

CLINICAL CONDITION[1]		IDAHO								MONTANA						NEVADA							WYOMING						
			Zone								Zone						Zone							Zone					
	Region Average	State Average	1	2	3	4	5	6	7	State Average	1	2	3	4	5	State Average	1	2	3	4	5	6	State Average	1	2	3	4	5	6
Lymphoma and leukemia	71.9%	73.8%	*19*	*21*	68	*21*	21	16	*3*	71.2%	48	*49*	34	*28*	*46*	66.4%	27	*2*	*6*	*1*	*2*	35	74.5%	*16*	14	*10*	*21*	*16*	34
Peripheral vascular disease	67.8	64.7	*19*	*18*	61	*20*	16	11	*3*	67.6	*49*	*42*	36	*26*	37	65.1	*28*	*3*	*6*	*1*	*2*	29	74.3	*15*	12	*11*	18	*19*	41
Congenital heart defect	67.3	69.8	*20*	*18*	63	19	19	13	*3*	69.1	*49*	*42*	34	*19*	40	57.0	*23*	*2*	*4*	*1*	1	30	67.8	11	12	*9*	*15*	*17*	35
Cardiac arrhythmias	67.3	66.4	*19*	16	62	*21*	19	12	*3*	68.6	*49*	41	34	*30*	39	61.1	25	*3*	*5*	*1*	*2*	30	70.4	*18*	11	*11*	13	*16*	38
Stroke rehabilitation	65.4	62.7	*19*	*17*	57	17	18	13	*2*	65.3	*48*	37	*38*	*25*	45	64.8	25	*3*	*5*	*1*	*2*	32	70.5	*16*	*15*	*9*	15	*15*	35
Cancer of oral cavity, head and neck	65.2	65.8	*18*	15	*66*	*19*	17	12	*3*	66.7	43	*45*	32	*25*	38	56.5	22	*2*	*5*	*1*	1	30	67.5	12	11	*9*	*18*	*16*	34
Cancer of genitourinary tract	64.2	65.5	*16*	16	*65*	17	19	*16*	*3*	62.5	39	*46*	30	*25*	37	60.8	20	1	*5*	*1*	1	*37*	68.8	12	*13*	*9*	*18*	*17*	33
Cancer of respiratory tract	63.2	63.7	*17*	*16*	59	18	16	*15*	*3*	62.8	41	*44*	31	*16*	32	57.0	22	*2*	*5*	*1*	1	30	67.5	12	10	*9*	*17*	*17*	35
Cancer of breast	63.2	64.4	*16*	*18*	*67*	*25*	11	*15*	*3*	62.3	*45*	37	32	*25*	38	57.9	21	*2*	*5*	*1*	1	*32*	66.9	13	10	*8*	*17*	*17*	32
Cerebral vascular accident	62.4	60.7	*17*	13	58	*21*	16	11	*2*	61.3	*44*	36	34	*23*	24	55.1	*24*	*3*	*4*	*1*	1	26	72.0	*16*	13	*10*	15	*16*	41
Cancer of central nervous system	61.3	63.9	*16*	*16*	57	*19*	*19*	10	*3*	59.2	36	*40*	29	*23*	32	52.9	20	1	*5*	*1*	1	28	67.5	*14*	*12*	*8*	*17*	*17*	30
Cancer of gastrointestinal tract	60.9	62.2	*17*	16	*61*	17	14	*15*	*3*	60.5	39	*41*	31	*22*	35	54.6	22	1	*5*	*1*	1	29	64.6	*13*	9	*10*	*16*	*17*	30
Myocardial infarction	59.2	58.4	*18*	14	55	15	16	11	*3*	59.6	39	*37*	31	*25*	33	53.9	*21*	*3*	*4*	*1*	*2*	24	63.1	*15*	8	*11*	13	*14*	35
Hypertensive cardiovascular disease	58.9	58.7	*17*	*15*	53	*18*	16	*13*	*2*	56.9	*41*	*34*	30	*23*	29	53.4	20	*2*	*4*	*1*	*2*	27	66.5	*17*	10	*9*	12	*13*	*40*
Cancer of skin	57.1	60.2	14	14	*61*	*19*	16	13	*2*	58.0	*39*	*39*	30	29	34	47.3	18	*2*	*4*	*1*	*1*	26	58.3	11	11	*8*	*14*	*16*	28
Rheumatic heart disease	55.7	59.5	*17*	*15*	*59*	16	15	11	*2*	55.0	*39*	*37*	29	*21*	28	49.5	19	*3*	*3*	*1*	*2*	25	50.9	*13*	7	*9*	12	*12*	32
Congestive heart failure	51.9	55.3	*16*	*14*	*55*	17	12	11	*2*	48.0	*35*	*31*	22	*22*	25	47.1	17	*3*	*4*	*1*	*2*	23	57.3	*15*	8	*9*	10	*12*	33
Rheumatic fever	50.7	52.9	12	*16*	*52*	13	14	11	*2*	50.2	*37*	*33*	27	18	25	44.3	16	*3*	*3*	*1*	*2*	22	53.0	*12*	7	*9*	10	*11*	30

[1] The clinical conditions are listed in rank order.

NOTE: Italics indicate a proportion of responses higher than the state average.

In summary, it is possible to use the italicized figures (and by contrast, the unitalicized figures) to describe a pattern of greater and lesser need for continuing education among physicians in the zones of each state in the four-state Region. In this connection, "greater need" includes all zones in which the proportion of physicians expressing a need for continuing education is higher than the state average for at least half (that is nine or more) of the clinical conditions mentioned; "lesser need" refers to those zones in each of the states where the proportion of physicians indicating a need for continuing education is lower than the state's average for at least half (nine or more) of the clinical conditions considered. Application of this pattern gives the following results:

b) Idaho.

- Greater need: Zones 1, 2, 4, 7
- Lesser need: Zones 3, 5, 6

c) Montana.

- Greater need: Zones 1, 2, 4
- Lesser need: Zones 3, 5

d) Nevada.

- Greater need: Zones 2, 3, 4, 5
- Lesser need: Zones 1, 6

e) Wyoming.

- Greater need: Zones 1, 3, 4, 5
- Lesser need: Zones 2, 6

Use of the preceding list, backed up by the specific figures given in Tables I-3 and I-4 would be of considerable assistance in locating, within each state, not only where the need for continuing education is strongest, but also the particular clinical conditions in which such continuing education is most desired.

This section can be concluded with the follwing observations:

- More than half of all physicians throughout the Mountain States Region--regardless of practice--indicate a need for continuing education in a variety of clinical conditions associated with heart disease, cancer, and stroke.

- In general, a higher proportion of the physicians in Wyoming express a need for continuing education than do those of any of the other states.

- In general, a lower proportion of the physicians in Nevada express a need for continuing education than do those of any of the other states.

- While there is some variation in the proportion of physicians in each of the states expressing a need for continuing education, this variation is relatively constant for all clinical areas.

- The clinical condition for which there is the highest indicated need for continuing education throughout the Region and in each of the states is that of lymphoma and leukemia.

- One other cancer condition ranked high (among the top six) among the Mountain States physicians in terms of their expressed desire for continuing education: cancer of the oral cavity, head, and neck.

- Three heart disease conditions were grouped closely together in expressed need for continuing education by the Mountain States physicians. Ranking second, third, and fourth, throughout the Region, they are: peripheral vascular disease, cardiac arrhythmias, and congenital heart defect.

- Ranking fifth, on a regional basis, among the Mountain States physicians is stroke rehabilitation. However, it might be noted here that this condition ranked tenth in Idaho; the other states were close to the regional rank.

2. Factors Affecting Need for Education

The analysis in the preceding section has provided an indication of the need felt by the Mountain States physicians for continuing education in the fields of cancer, heart disease, and stroke, and has also pointed out the particular geographic locations where this need appears to be the strongest. While this is extremely useful information, the design of the most effective programs in continuing education for these physicians can be considerably enhanced by a knowledge of some of the characteristics of these physicians and their prevailing clinical practices. For example, is there a difference in indication of need among physicians who have been in practice a relatively short time when compared to physicians who have been in practice for a longer period of time? Finally, to what extent does the variety of disease conditions seen by the physician influence his expression of need for continuing education? These questions will be examined in this section to the extent that the data from the survey permit.

a) Years of Active Practice. The relationship of interest and concern here is that between physicians' experiences, as measured by years of active practice and expression of need for continuing education. For analytic purposes, the oldest group of physicians in terms of experience (30 or more years of active practice) was not included. Rather, the comparison was made between those physicians with fewer than 10 years of active practice and those whose experience included between 10 and 29 years of active practice. These two groups of physicians were selected for comparison of responses indicating need for continuing education in each of the identified clinical conditions associated with heart disease, cancer, and stroke.

It could be hypothesized that the expression of need for continuing education would be greater among physicians who have been in practice longer, and for whom more time has elapsed since the completion of their formal education. The survey data bear out this hypothesis, almost without exception. In all but one of the 18 clinical condition areas, physicians who have been in practice from 10 to 29 years express a greater need for continuing education than do those who have been in practice a relatively few years. The single exception is the clinical condition of rheumatic heart disease; here, the less experienced physicians indicate a greater need for continuing education than do those with more experience.

The regional and state distributions for both groups is shown in Table I-5. While a number of observations can be made on the basis of close examination of these data, those of most apparent significance to the analytic objectives of the present study are:

- Among physicians who have practiced a shorter length of time, proportionately more in Wyoming than in any other state express the greatest need for continuing education. (This is true of many, though not all, of the clinical conditions under examination).

Table I-5. Need for Continuing Education in Clinical Conditions According to Experience of Reporting Physicians

CLINICAL CONDITIONS	REGION		IDAHO		MONTANA		NEVADA		WYOMING	
	Yrs of Prac. 0-9	10-29	Yrs of Prac. 0-9	10-29	Yrs of Prac. 0-9	10-29	Yrs of Prac. 0-9	10-29	Yrs of Prac. 0-9	10-29
Congestive heart failure	46.6%	51.9%	36.4%	58.8%	51.8%	45.5%	45.5%	45.8%	51.4%	56.6%
Cardiac arrhythmias	66.7	66.8	52.7	70.6	73.8	65.4	66.7	59.3	71.4	68.7
Hypertensive cardiovascular disease	56.3	57.5	41.8	57.8	59.0	56.1	60.6	48.3	68.6	66.3
Myocardial infarction	56.3	56.8	44.4	55.6	61.9	57.9	57.6	50.0	60.0	61.4
Rheumatic heart disease	57.2	53.9	49.1	61.5	60.0	51.9	60.6	40.7	60.0	54.8
Rheumatic fever	49.0	51.1	41.8	60.0	50.6	48.7	54.5	37.9	51.4	51.9
Congenital heart defect	66.8	67.9	63.0	71.8	69.8	70.1	66.7	55.0	65.7	67.1
Cerebral vascular accident	59.0	62.8	44.4	64.7	64.6	59.6	54.5	54.2	72.2	71.8
Peripheral vascular disease	66.4	68.3	55.4	65.2	68.2	69.6	63.6	63.9	72.2	73.9
Stroke rehabilitation	63.4	65.0	51.9	65.0	67.1	65.0	69.7	61.4	66.7	67.5
Cancer of gastrointestinal tract	55.5	62.2	50.0	65.7	56.1	60.4	57.1	55.2	61.1	65.1
Cancer of genitourinary tract	60.7	64.6	60.0	65.5	57.1	62.9	62.9	62.7	67.6	67.9
Cancer of skin	53.8	56.6	46.6	61.3	61.4	56.1	51.4	45.0	50.0	58.1
Cancer of respiratory tract	59.1	64.1	47.3	67.6	62.2	61.8	60.0	56.9	69.4	67.5
Cancer of central nervous system	58.0	62.5	54.7	66.9	59.8	58.3	58.8	51.7	58.3	70.7
Cancer of oral cavity, head and neck	61.0	67.9	57.9	68.9	62.7	69.6	55.9	58.3	66.7	69.9
Cancer of breast	59.0	63.9	48.2	67.4	64.3	60.9	52.9	61.0	69.4	66.3
Lymphoma and leukemia	68.4	73.8	60.4	78.3	69.0	74.1	70.6	62.3	77.1	74.1

- In Montana and Nevada, there is greater variability from clinical condition to clinical condition among the physicians with less than ten years of active practice in terms of the number who express a need for continuing education.

- Among physicians who have been in active practice from 10 to 29 years, the highest proportion expressing a need for continuing education in most of the clinical conditions is found in Idaho.

- For all 18 clinical conditions associated with heart disease, cancer, and stroke, and for physicians with 10 to 29 years of active practice, the smallest proportion expressing a need for continuing education in these diseases is in Nevada.

b) General Practice vs. Specialization. In addition to length of time in active practice, another characteristic of the physician may be expected to have some influence on his feeling of need for continuing education in the clinical conditions designated here. This is the type of practice in which he is engaged, i.e., general practice or specialization. When the survey data are looked at from this standpoint, the results are quite striking. For every clinical condition, and for each one of the four states in the Region, a higher proportion of physicians who are in general practice express a need for continuing education. Specifically, at least two out of every three general practitioners in the Mountain States Region indicate a need for continuing education in every one of the 18 clinical conditions designated. In some cases, the proportion rises to seven, eight, or nine out of every ten physicians expressing such need.

Details as to number and proportion of general practitioners expressing need for continuing education in each of the 18 clinical conditions are shown in Table I-6. The clinical conditions in this table are arranged in rank order for the Region as a whole. The high proportion of general practitioners expressing a need for continuing education in the Mountain States Region is readily apparent in this table. Also apparent is the general uniformity throughout the Region and within each of the four states as to the clinical conditions for which the greatest education needs are felt: cardiac arrhythmias, stroke rehabilitation, and lymphoma and leukemia. Even though rheumatic fever is at the bottom of the list, two out of every three general practitioners express the need for education in this condition.

Table I-6. Need for Continuing Education in Clinical Conditions As Reported by Physicians in General Practice

CLINICAL CONDITION	REGION	IDAHO	MONTANA	NEVADA	WYOMING
Cardiac arrhythmias	87.5%	87.6%	85.8%	82.5%	92.6%
Stroke rehabilitation	87.1	90.1	85.1	85.0	87.4
Lymphoma and leukemia	86.9	90.0	84.9	82.1	88.5
Congenital heart defect	86.4	94.4	87.4	66.6	83.5
Peripheral vascular disease	83.9	87.5	82.7	77.5	83.9
Cerebral vascular accident	81.6	85.0	79.1	70.0	86.6
Myocardial infarction	79.8	83.2	77.5	71.8	82.9
Cancer of breast	79.6	84.9	76.7	65.8	84.0
Cancer of respiratory tract	78.9	85.2	77.4	67.5	77.9
Cancer of gastro-intestinal tract	78.7	83.7	75.6	65.8	83.1
Cancer of oral cavity, head and neck	78.6	86.2	74.2	70.3	79.2
Cancer of genito-urinary tract	78.5	86.1	74.9	67.5	79.5
Cancer of central nervous system	77.2	85.2	70.6	67.6	81.6
Hypertensive cardiovascular disease	75.5	77.9	73.9	66.7	79.3
Rheumatic heart disease	72.1	79.3	71.7	59.0	69.5
Cancer of skin	69.6	76.8	69.7	52.7	67.5
Congestive heart failure	66.6	71.7	61.2	61.5	70.8
Rheumatic fever	66.6	70.3	66.7	53.9	67.5

Turning now to physicians who consider their practice to be specialized, examination of Table I-7 shows quite clearly that this group of physicians expressed need for continuing education in the clinical conditions of heart disease, cancer, and stroke that is by no means comparable to that expressed by general practitioners. In almost every case, the proportion of general practitioners expressing need is at least twice as great. Also, there is somewhat less uniformity in the rankings for the Region and the states than is the case for the general practitioner, possibly due to the variety of specializations that can be included in the practice of medicine. It is also interesting to note that the rank order of the various clinical conditions varies between the two scales. Only one of the three clinical conditions ranking highest in the general practitioner's scale is included in the top three of the specialist's scale; this is lymphoma and leukemia, which ranks first for the specialists on a regional basis and for all states except Wyoming (where it ranks fifth). The specialists do join the general practitioners in ranking need for continuing education in rheumatic fever as the one that the smallest number desire; nevertheless, it should be pointed out that one out of every three specialists responding to this question indicates a need for information in this area.

In an effort to obtain a somewhat clearer picture of the distinction between general practice and specialized practice with regard to expressed need for continuing education, the latter category was separated into two parts: specialized practice, and specialized practice with Board Certification. In Table I-8 the rankings for each of these groupings of physician by type of practice are shown for the Region as a whole. It is apparent that the expression of need for continuing education in the designated clinical conditions is more nearly alike between the two groups in specialized practice than it is between either of these groups and those in general practice. Nevertheless, although the differences between groups are evident, their general similarities should not be overlooked. For example, lymphoma and leukemia and peripheral vascular disease rank high in all three groupings. This shows that a high proportion of physicians in general practice, as well as a high proportion of physicians who are in specialized practice and who are Board Certified, indicate a need for continuing education associated with these two clinical conditions. On the same basis, congestive heart failure, hypertensive cardiovascular disease, rheumatic heart disease, and rheumatic fever all rank low in all three scales. Here again, there is agreement on the part of general practitioners, specialized pratitioners, and Board Certified specialists concerning those areas in which the smallest number feel a need for continuing education.

Table I-7. Need for Continuing Education in Clinical Conditions As Reported by Board-Certified Physicians in Specialized Practice .

CLINICAL CONDITION	REGION	IDAHO	MONTANA	NEVADA	WYOMING
Lymphoma and leukemia	57.7%	57.0%	58.5%	61.8%	52.2%
Cancer of genito-urinary tract	52.6	47.1	54.9	56.6	53.2
Peripheral vascular disease	51.4	40.5	51.0	60.0	61.2
Cancer of breast	49.8	43.9	52.4	57.7	45.5
Cancer of oral cavity, head and neck	49.6	46.2	58.4	52.7	54.3
Cancer of respiratory tract	49.5	40.0	53.5	51.9	54.3
Cancer of gastro-intestinal tract	45.6	38.3	48.0	50.9	46.7
Cancer of skin	44.8	40.0	47.0	46.3	46.8
Congenital heart defect	44.7	44.7	44.7	51.0	37.2
Cardiac arrhythmias	43.9	40.3	48.5	50.0	33.3
Cancer of central nervous system	43.7	45.9	42.3	43.4	43.2
Stroke rehabilitation	41.7	31.2	45.3	52.1	41.9
Cerebral vascular accident	40.6	30.8	41.2	47.1	48.9
Hypertensive cardiovascular disease	39.3	32.5	37.9	46.0	46.7
Rheumatic heart disease	37.5	41.6	33.7	44.2	31.1
Congestive heart failure	35.3	36.4	34.4	41.2	28.9
Myocardial infarction	35.0	28.9	35.5	44.9	33.3
Rheumatic fever	33.3	35.1	31.6	39.2	27.3

Table I-8. Relationship of Type of Physicians' Practice to Expressed Need for Continuing Education[1]

CLINICAL CONDITION	TYPE OF PRACTICE		
	General Practice	Specialized Practice	Specialized Practice (Board Certified)
Congestive heart failure	17	17	16
Cardiac arrhythmias	1	8	10
Hypertensive cardiovascular disease	14	14	14
Myocardial infarction	7	16	17
Rheumatic heart disease	15	15	15
Rheumatic fever	18	18	18
Congenital heart defect	4	6	9
Cerebral vascular accident	6	13	13
Peripheral vascular disease	5	3	3
Stroke rehabilitation	2	12	12
Cancer of gastro-intestinal tract	10	10	7
Cancer of genito-urinary tract	12	4	2
Cancer of skin	16	11	8
Cancer of respiratory tract	9	5	6
Cancer of central nervous system	13	9	11
Cancer of oral cavity, head and neck	11	2	5
Cancer of breast	8	7	4
Lymphoma and leukemia	3	1	1

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[1] Numbers give rank order of clinical conditions.

In summary, a very strong indication of need for continuing education in the "killer" diseases (heart disease, cancer, and stroke) is expressed by the physicians in the Mountain States Region. The indication of this need varies among states, it varies among zones within the states, it varies with the length of time a physician has been in active practice, it varies with type of practice (specialized or general), and it varies with each of 18 specific clinical conditions associated with the three diseases. Perhaps concern should be directed less toward differentiating among all of the variables, and more toward an unusually clear and dominant signal: throughout the Mountain States Region, there is a strong and persistent need expressed for continuing education in the "killer" diseases. That this need is expressed, and that it is expressed so strongly, is a signal about which no doubt should exist.

c) Needs Related to Practice. The object of this analysis is to associate two variables: clinical conditions in which physicians indicate a need for continuing education, and clinical conditions that are actually encountered by physicians. Presumably, this association could suggest some cost-benefit priorities for investment in continuing education programs. To accomplish this, it is necessary to relate two analyses already presented: the nature of clinical practice experienced by Mountain States physicians (see Section B.6 and Table I-2), and the expressed need of physicians for continuing education in selected clinical areas (See Section C.1 and Tables I-3 and I-4).

Composite Table I-9 has been constructed to show both extent of indicated need and extent of experience for each clinical condition, and the comparative rank order for each distribution. The results have been summarized graphically in Figure I-1. Examination of Figure I-1 reveals that:

- For the Region as a whole, one disease stands out above all others in terms of physicians' practice and physicians' need for continuing education: peripheral vascular disease. Not only is this disease identified by a very high proportion of physicians as one in which they feel need for continuing education, it is also ranked first in terms of the proportion of physicians who indicate they take care of patients with this disease.

- A similar, although not quite so striking, situation is seen with regard to the clinical condition of cardiac arrhythmias. In this case, a relatively high proportion of physicians indi-

Table I-9. Clinical Conditions Related to Need for Continuing Education and to Actual Practice As Reported by Physicians

CLINICAL CONDITION	NEED		PRACTICE	
	Percent	Rank	Percent	Rank
Congestive heart failure	51.9	17	71.7	5
Cardiac arrhythmias	67.3	4	71.6	6
Hypertensive cardiovascular disease	58.9	14	72.4	3
Myocardial infarction	59.2	13	66.1	10
Rheumatic heart disease	55.7	16	72.4	4
Rheumatic fever	50.7	18	70.0	8
Congenital heart defect	67.3	3	57.0	16
Cerebral vascular accident	62.4	10	71.3	7
Peripheral vascular disease	67.8	2	79.5	1
Stroke rehabilitation	65.4	5	59.9	13
Cancer of gastro-intestinal tract	60.9	12	66.8	9
Cancer of genito-urinary tract	64.2	7	59.9	14
Cancer of skin	57.1	15	72.5	2
Cancer of respiratory tract	63.2	8	57.8	15
Cancer of central nervous system	61.3	11	42.3	18
Cancer of oral cavity, head and neck	65.2	6	54.6	17
Cancer of breast	63.2	9	64.4	12
Lymphoma and leukemia	71.9	1	64.4	11

CLINICAL CONDITION

1 Congestive heart failure
2 Cardiac arrhythmias
3 Hypertensive cardiovascular disease
4 Myocardial infarction
5 Rheumatic heart disease
6 Rheumatic fever
7 Congenital heart defect
8 Cerebral vascular accident
9 Peripheral vascular disease
10 Stroke rehabilitation
11 Cancer of gastro-intestinal tract
12 Cancer of genito-urinary tract
13 Cancer of skin
14 Cancer of respiratory tract
15 Cancer of central nervous system
16 Cancer of oral cavity, head & neck
17 Cancer of breast
18 Lymphoma and leukemia

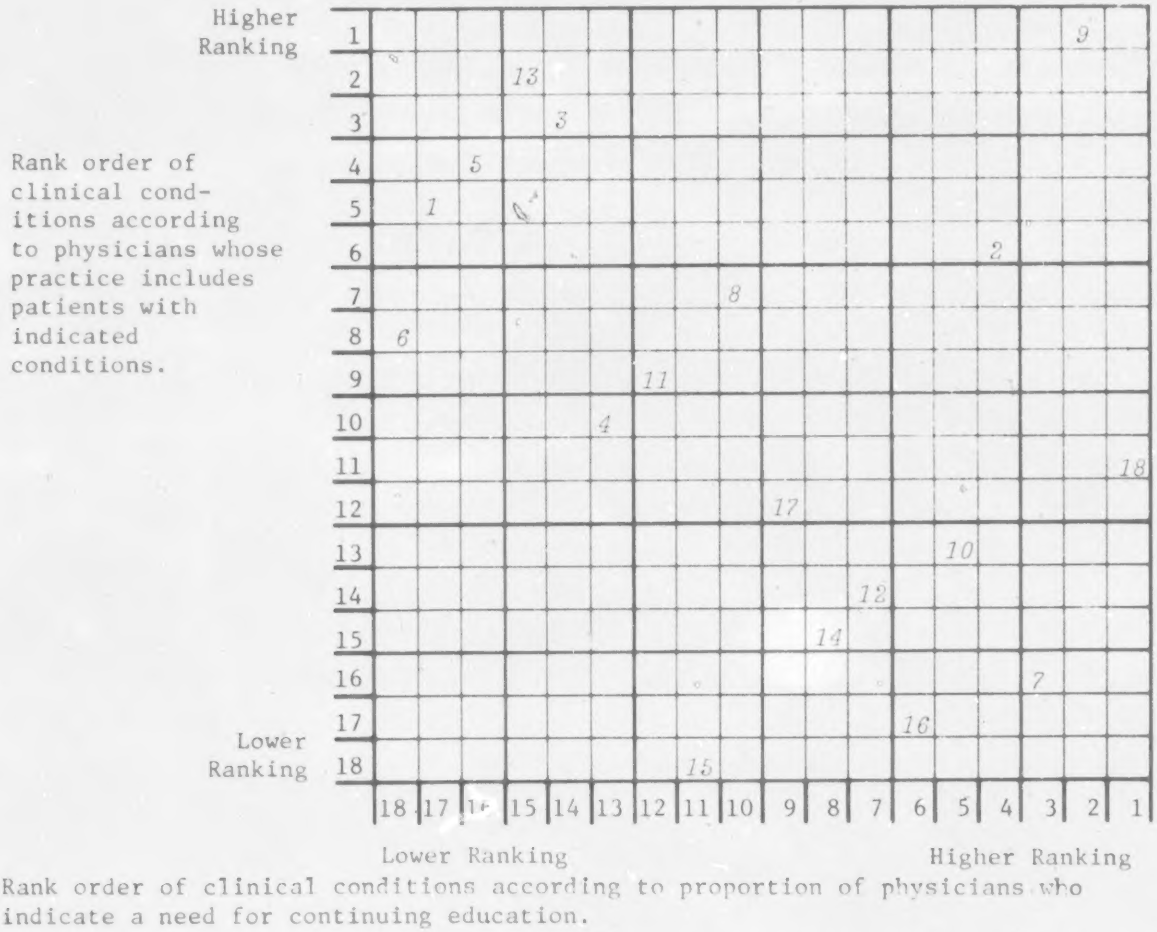

Figure I-1. Rank Order Comparison of Clinical Conditions Related to Need for Continuing Education and to Actual Practice as Reported by Physicians

cate need (it ranks fourth), and almost as high a proportion of physicians indicate that it is associated with their practices (it ranks sixth).

- Thus, the two clinical conditions associated with both a high proportion of physician practice as well as a high proportion of indicated need for continuing education are peripheral vascular disease and cardiac arrhythmias.

- There are no clinical conditions associated with low rankings on both scales.

- There are four clinical conditions associated with low expressed need for continuing education, but with high "visibility" (i.e., a large proportion of physicians have patients with these clinical conditions); these four conditions are hypertensive cardiovascular disease, cancer of skin, rheumatic heart disease, and congestive heart failure. This suggests that despite relatively widespread practice in these clinical conditions, the need for continuing education is felt less extensively than for other diseases.

- Just the opposite is true for three other clinical conditions: congenital heart defect, stroke rehabilitation, and cancer of oral cavity, head, and neck. These conditions appear in the top third rank with respect to expressed need for continuing education, but in the bottom third rank according to the proportion of physicians whose practices include patients with these conditions. Thus, while the proportion of physicians who have practice in these clinical conditions is relatively small, the number of physicians who express the need for continuing education associated with these conditions is relatively high.

- According to the proportion of physicians whose practices include patients with lymphoma and leukemia, this clinical condition ranks eleventh; that is, it is relatively less common for physicians to see patients with this disease.* Nevertheless, the same group of physicians commonly expresses a need for continuing education in this disease. Indeed, the extent of the affirmation of need for continuing education in this disease is so common that it ranks highest among all clinical conditions.

- In all but one clinical area (cancer of the central nervous system) better than seven out of ten physicians (70.2%) actually do have practices that include the clinical condition

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* However, 64.6 percent of the physicians do have patients with this disease

Table I-10. Observation of Clinical Conditions in the Practice of Physicians Who Express a Need for Continuing Education in Those Conditions

CLINICAL CONDITION	NEED		PRACTICE		PRACTICE AS SUBSET OF NEED	
	Percent	Rank	Percent	Rank	Percent	Rank
Congestive heart failure	51.9	17	71.7	5	91.0	6
Cardiac arrhythmias	67.3	4	71.6	6	92.3	3
Hypertensive cardiovascular disease	58.9	14	72.4	3	92.6	2
Myocardial infarction	59.2	13	66.1	10	90.2	7
Rheumatic heart disease	55.7	16	72.4	4	92.1	4
Rheumatic fever	50.7	18	70.0	8	91.2	5
Congenital heart defect	67.3	3	57.0	16	75.7	14
Cerebral vascular accident	62.4	10	71.3	7	90.0	8
Peripheral vascular disease	67.8	2	79.5	1	95.4	1
Stroke rehabilitation	65.4	5	59.9	13	78.6	13
Cancer of gastro-intestinal tract	60.9	12	66.8	9	85.1	10
Cancer of genito-urinary tract	64.2	7	59.9	14	74.4	16
Cancer of skin	57.1	15	72.5	2	86.8	9
Cancer of respiratory tract	63.2	8	57.8	15	74.5	15
Cancer of central nervous system	61.3	11	42.3	18	58.4	18
Cancer of oral cavity, head and neck	65.2	6	54.6	17	70.2	17
Cancer of breast	63.2	9	64.4	12	80.2	11
Lymphoma and leukemia	71.9	1	64.4	11	78.8	12

Table I-11. Observation of Clinical Conditions in the Practice of Physicians Who Express a Need for Continuing Education in These Conditions, by State

CLINICAL CONDITION	REGION	IDAHO	MONTANA	NEVADA	WYOMING
Congestive heart failure	91.0%	93.3%	88.0%	85.7%	95.2%
Cardiac arrhythmias	92.3	93.6	91.2	87.7	95.1
Hypertensive cardiovascular disease	92.6	95.6	91.8	83.7	94.8
Myocardial infarction	90.2	91.8	87.6	87.5	93.4
Rheumatic heart disease	92.1	94.7	90.2	84.4	96.2
Rheumatic fever	91.2	93.1	89.1	84.6	95.8
Congenital heart defect	75.7	73.7	79.3	74.0	72.5
Cerebral vascular accident	90.0	97.4	87.0	84.3	89.2
Peripheral vascular disease	95.4	96.5	95.5	94.9	94.4
Stroke rehabilitation	78.6	81.8	79.1	72.4	77.5
Cancer of gastro-intestinal tract	85.1	81.0	86.4	80.0	82.0
Cancer of genito-urinary tract	74.4	75.0	74.5	72.7	74.2
Cancer of skin	86.8	88.0	87.3	75.0	90.2
Cancer of respiratory tract	74.5	73.7	72.8	80.4	75.3
Cancer of central nervous system	58.4	61.4	60.3	51.1	55.2
Cancer of oral cavity, head and neck	70.2	70.7	70.7	69.2	69.2
Cancer of breast	80.2	82.5	81.8	74.1	77.8
Lymphoma and leukemia	78.8	79.8	80.7	71.4	78.6

CLINICAL CONDITION

1 Congestive heart failure
2 Cardiac arrhythmias
3 Hypertensive cardiovascular disease
4 Myocardial infarction
5 Rheumatic heart disease
6 Rheumatic fever
7 Congenital heart defect
8 Cerebral vascular accident
9 Peripheral vascular disease
10 Stroke rehabilitation
11 Cancer of gastro-intestinal tract
12 Cancer of genito-urinary tract
13 Cancer of skin
14 Cancer of respiratory tract
15 Cancer of central nervous system
16 Cancer of oral cavity, head & neck
17 Cancer of breast
18 Lymphoma and leukemia

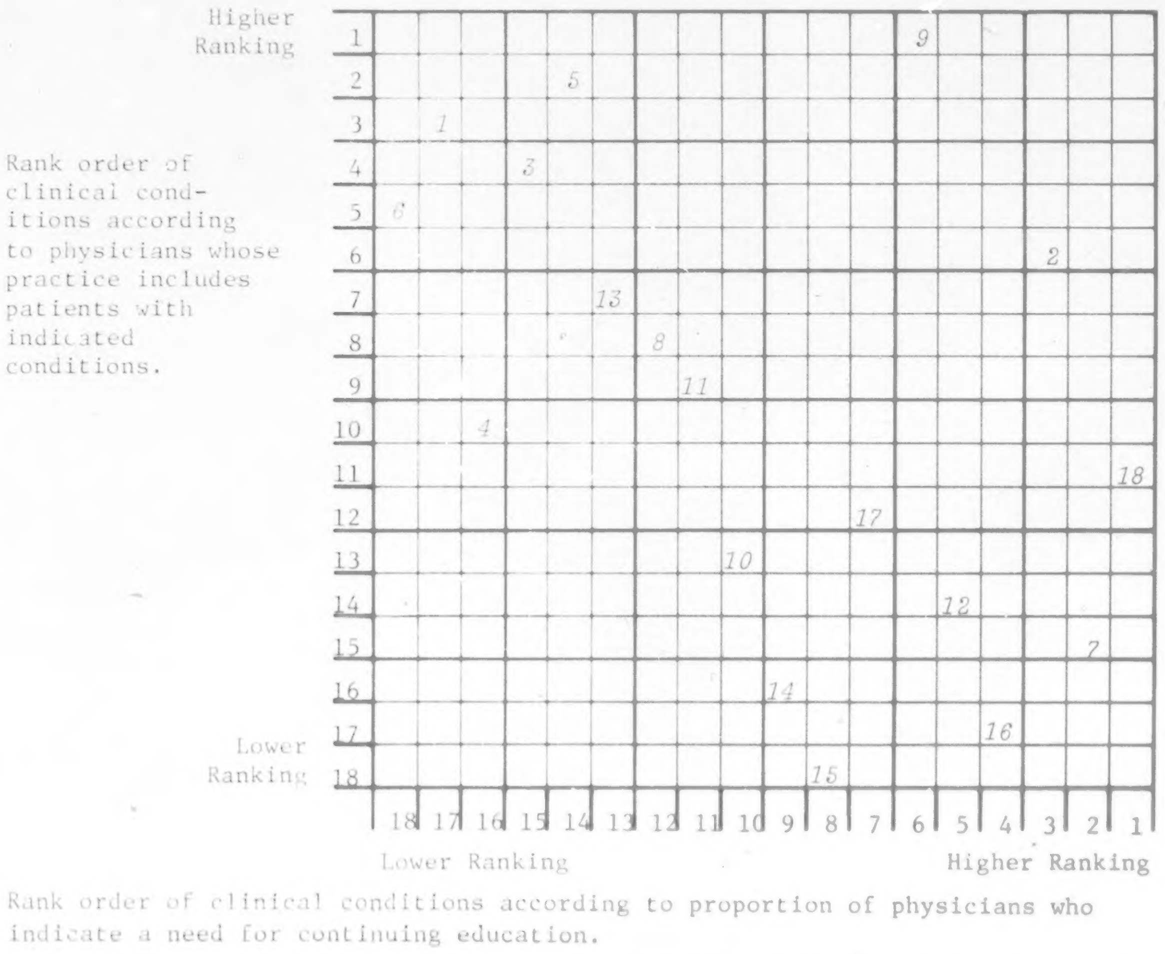

Figure I-2. Rank Order Comparison of Clinical Conditions Related to Need for Continuing Education and to Actual Practice As Reported by Idaho Physicians

CLINICAL CONDITION

1 Congestive heart failure
2 Cardiac arrhythmias
3 Hypertensive cardiovascular disease
4 Myocardial infarction
5 Rheumatic heart disease
6 Rheumatic fever
7 Congenital heart defect
8 Cerebral vascular accident
9 Peripheral vascular disease
10 Stroke rehabilitation
11 Cancer of gastro-intestinal tract
12 Cancer of genito-urinary tract
13 Cancer of skin
14 Cancer of respiratory tract
15 Cancer of central nervous system
16 Cancer of oral cavity, head & neck
17 Cancer of breast
18 Lymphoma and leukemia

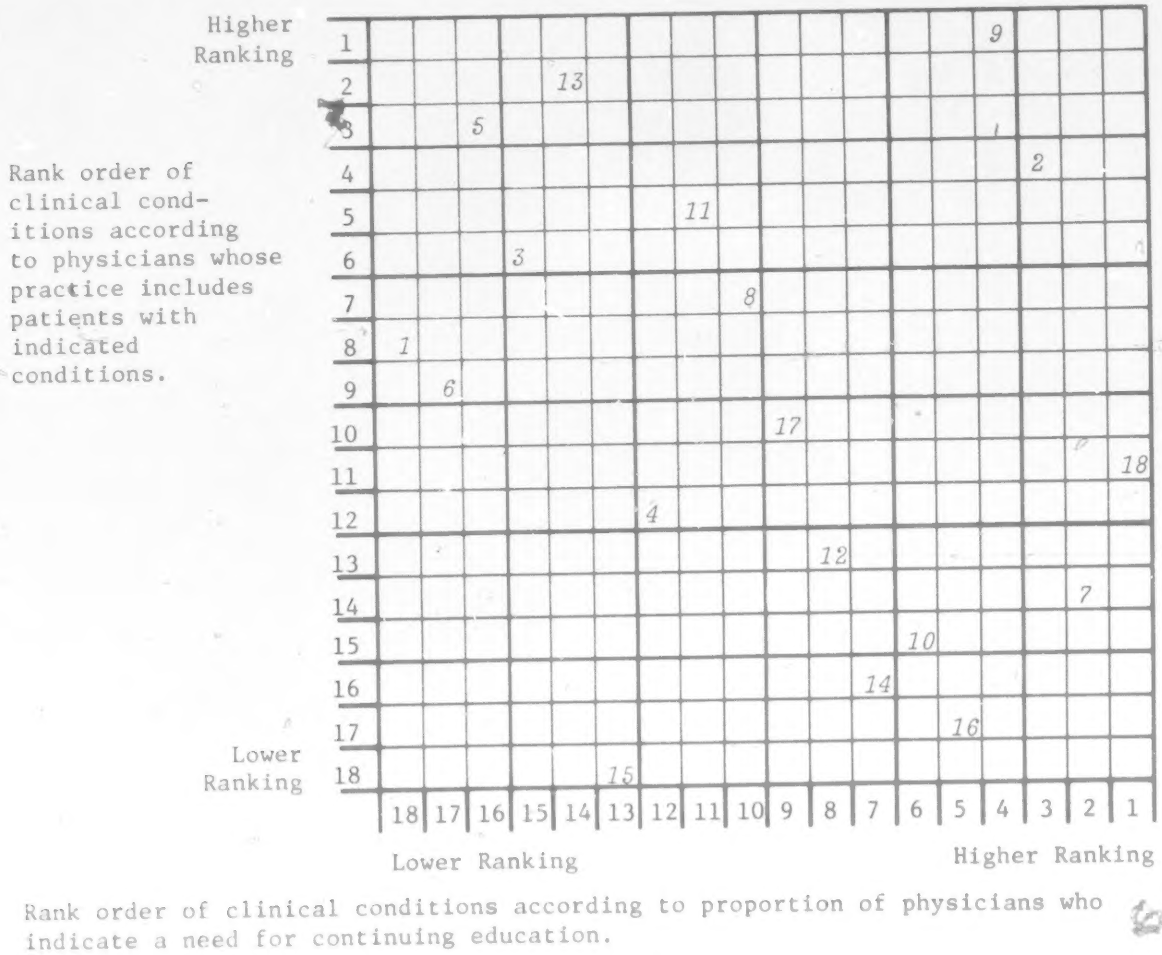

Figure I-3. Rank Order Comparison of Clinical Conditions Related to Need for Continuing Education and to Actual Practice As Reported by Montana Physicians

CLINICAL CONDITION

1 Congestive heart failure
2 Cardiac arrhythmias
3 Hypertensive cardiovascular disease
4 Myocardial infarction
5 Rheumatic heart disease
6 Rheumatic fever
7 Congenital heart defect
8 Cerebral vascular accident
9 Peripheral vascular disease
10 Stroke rehabilitation
11 Cancer of gastro-intestinal tract
12 Cancer of genito-urinary tract
13 Cancer of skin
14 Cancer of respiratory tract
15 Cancer of central nervous system
16 Cancer of oral cavity, head & neck
17 Cancer of breast
18 Lymphoma and Leukemia

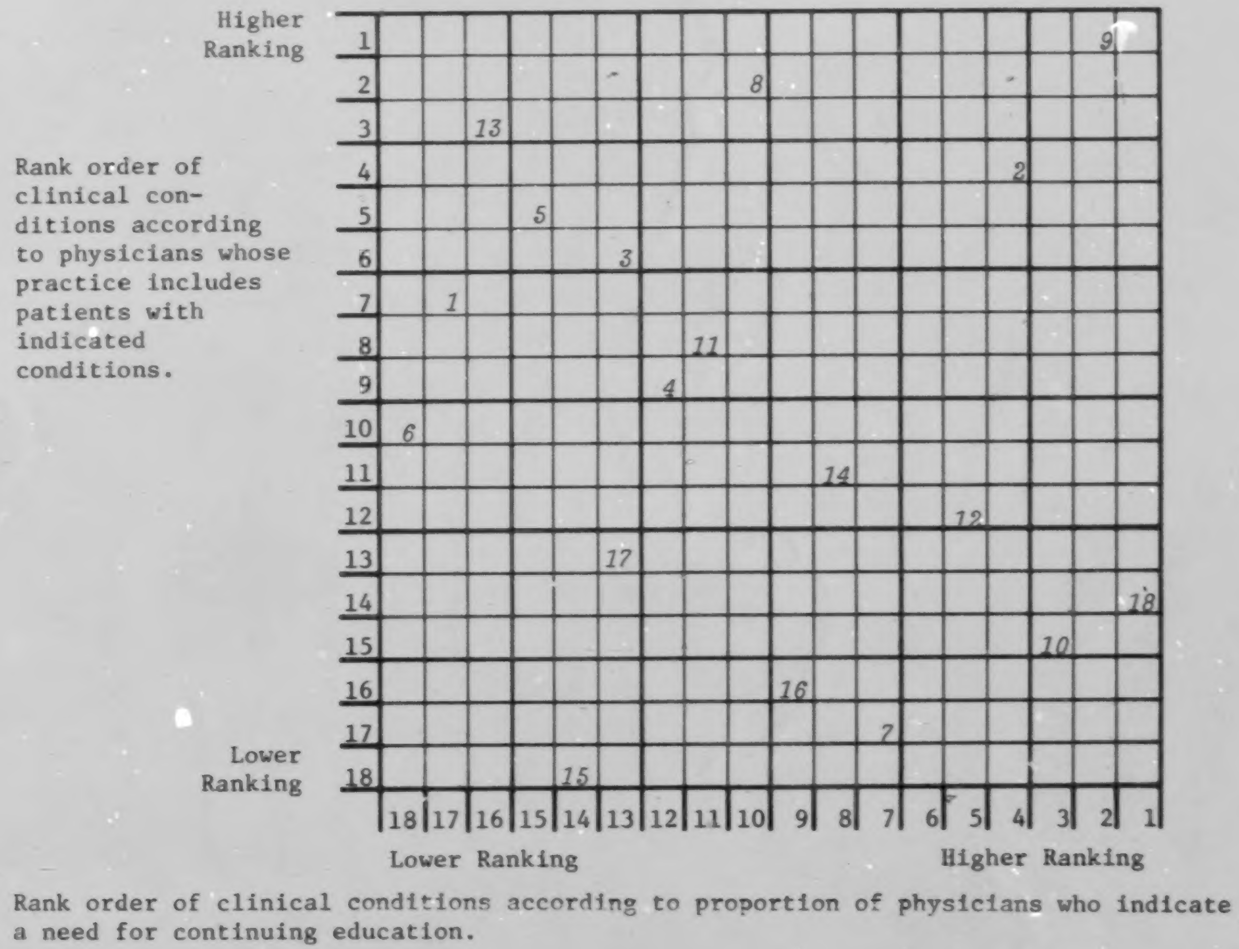

Figure I-4. Rank Order Comparison of Clinical Conditions Related to Need for Continuing Education and to Actual Practice As Reported by Nevada Physicians

CLINICAL CONDITION

1 Congestive heart failure
2 Cardiac arrhythmias
3 Hypertensive cardiovascular disease
4 Myocardial infarction
5 Rheumatic heart disease
6 Rheumatic fever
7 Congenital heart defect
8 Cerebral vascular accident
9 Peripheral vascular disease
10 Stroke rehabilitation
11 Cancer of gastro-intestinal tract
12 Cancer of genito-urinary tract
13 Cancer of skin
14 Cancer of respiratory tract
15 Cancer of central nervous system
16 Cancer of oral cavity, head & neck
17 Cancer of breast
18 Lymphoma and leukemia

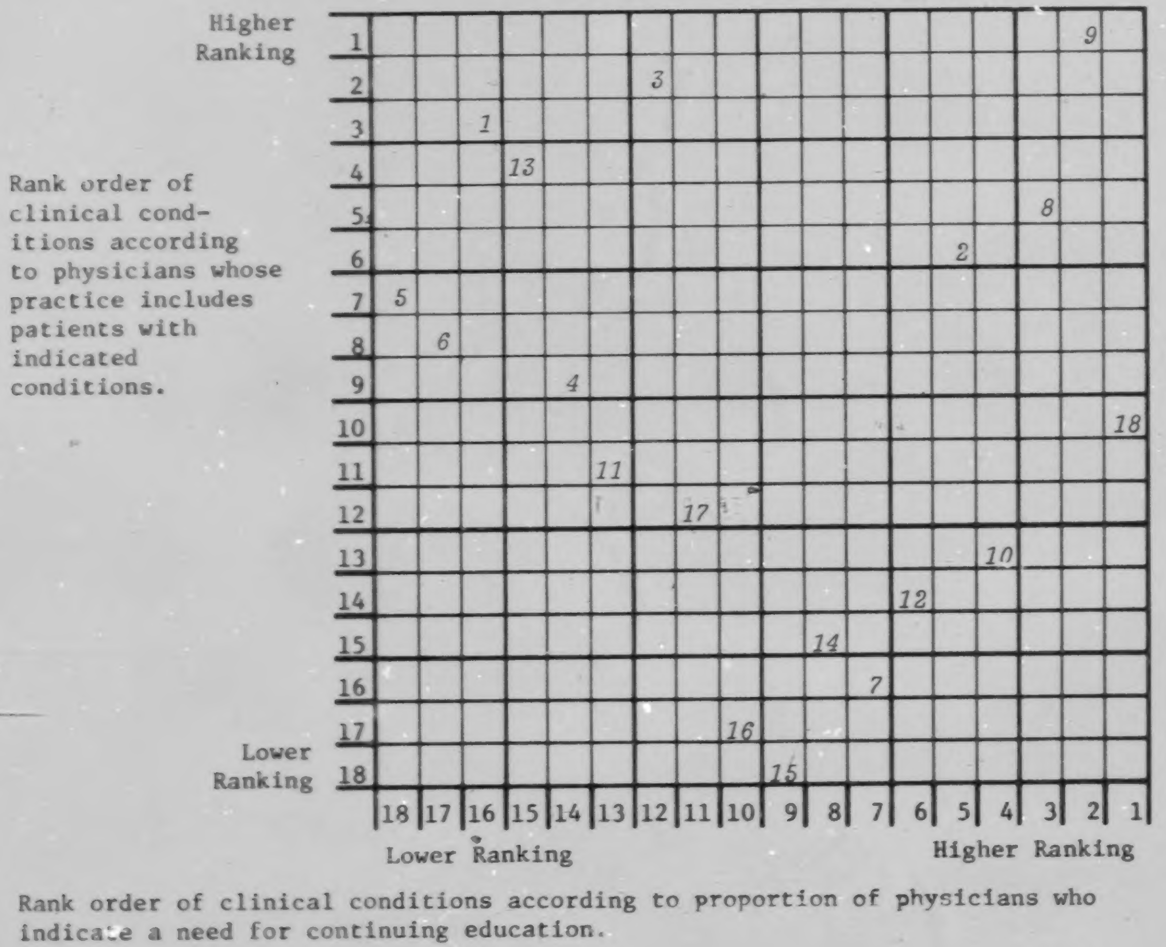

Figure I-5. Rank Order Comparison of Clinical Conditions Related to Need for Continuing Education and to Actual Practice as Reported by Wyoming Physicians

about which they have expressed a need for continuing education. (This situation is shown in Table I-10, which is a version of Table I-9 modified and expanded to show physician practice in terms of physician expressed need, rather than the simple separate distributions contained in Table I-9).

- Further examination of Table I-10 reveals that for 8 of the 18 clinical conditions, more than 90 percent of the physicians actually have practice in the clinical condition about which they have expressed a need for continuing education.

- State distributions of physician demand for continuing education, as a factor of actual clinical practice for each of the clinical condition areas, are shown in Table I-11. While there is some difference in relative ranking from state to state, and from state to Region average, the actual percentage differences are very small, suggesting that the regional pattern discussed above is reasonably representative of the individual state patterns. Comparative practice and education need rankings for each clinical condition, by state, are shown in Figures I-2, I-3, I-4, and I-5.

D. DESIRED METHODS AND PROCEDURES OF CONTINUING EDUCATION

Physicians were asked to give their assessment of a number of existing or proposed methods for continuing medical education in heart disease, cancer, and stroke. They were asked to indicate whether or not it was needed if not available.

An average of 807 physicians responded to the several parts of this question. The range was from a low of 724 responses for correspondence courses to a high of 849 responses concerning medical journals.

Table I-12 shows the proportion of physicians who gave their opinion about each of the indicated methods of continuing medical education for the Mountain States Region as a whole and for each of the four states in the Region. In Table I-13 the proportions for "available and used" and for "not available but needed" have been combined to obtain a single proportion that measures the extent of general support for the indicated method: the closer the combined proportion approaches 100%, the stronger the indication of support for the method. By the same token, weak support for a method is indicated if the combined proportion approaches 0%.

In interpreting the significance of these combined proportions, the contribution of each factor should be considered. If there is strong support for

Table I-12. Available and Needed Methods of Continuing Education As Reported by Physicians

METHODS	REGION % Avail. and Used	REGION % Not Avail. but Needed	IDAHO % Avail. and Used	IDAHO % Not Avail. but Needed	MONTANA % Avail. and Used	MONTANA % Not Avail. but Needed	NEVADA % Avail. and Used	NEVADA % Not Avail. but Needed	WYOMING % Avail. and Used	WYOMING % Not Avail. but Needed
Demonstrations	9.0	35.7	7.2	36.9	6.7	34.2	22.9	33.9	6.3	38.0
Group discussions	48.7	33.5	50.0	34.0	47.1	34.3	58.4	24.8	43.3	37.2
Clinical practice	4.8	28.9	4.8	25.1	6.3	30.3	6.8	26.2	0.7	34.2
Colleague contact	90.7	4.4	92.0	5.6	90.3	4.2	89.6	3.5	90.2	3.7
Educational films	61.5	16.0	63.2	16.6	60.6	17.3	59.3	15.9	62.3	13.0
Medical journals	93.5	2.9	93.8	3.1	93.0	3.5	93.0	2.6	94.5	1.8
Unsolic. med. lit.	76.3	0.7	76.6	0.4	76.1	1.3	78.3	0.0	74.8	0.6
Lib.-hospitals	72.5	11.0	78.0	9.2	62.5	13.3	84.2	7.0	74.4	12.2
Lib.-med. schools	33.9	26.6	35.5	28.5	28.5	27.8	33.6	24.3	41.6	22.8
Lib.-med. society	43.0	18.8	37.4	20.4	39.4	21.1	46.6	13.6	56.0	15.3
Lib.-personal	92.6	2.9	93.2	2.4	94.8	1.9	91.2	2.7	88.3	5.5
Audio tape recordings	35.9	31.6	44.2	26.9	35.2	32.8	35.2	34.3	25.2	35.0
Medical television	9.0	48.2	6.0	46.2	14.1	44.1	6.4	53.6	6.1	55.2
Medical radio	3.4	37.2	2.5	34.4	2.8	36.6	8.5	36.8	2.5	42.7
Lect.-loc. hosp.	57.4	17.1	62.4	16.0	48.8	19.1	75.9	8.0	52.2	21.4
Lect.-loc. med. soc.	73.4	12.2	80.9	10.4	74.4	12.8	63.6	13.6	66.5	12.8
Lect.-med. schools	21.2	38.2	25.6	37.6	12.5	41.8	34.6	29.0	21.3	38.7
Lect.-state med. assn	59.0	12.7	57.1	11.3	64.5	12.8	55.0	13.5	54.5	14.1
Lect.-nat'l med. org.	41.8	16.9	39.5	14.6	44.3	18.4	43.1	14.7	39.5	19.0
Correspond. courses	31.2	10.4	31.1	6.4	36.6	12.7	25.0	9.0	25.5	13.1

Table I-13. Extent of Support for Methods of Continuing Education As Reported by Physicians

METHODS	REGION Combined % Avail.& Used, Not Avail. but Needed	IDAHO Combined % Avail.& Used, Not Avail. but Needed	MONTANA Combined % Avail.& Used, Not Avail. but Needed	NEVADA Combined % Avail.& Used, Not Avail. but Needed	WYOMING Combined % Avail.& Used, Not Avail. but Needed
Demonstrations	44.7	44.1	40.9	56.8	44.3
Group discussions	82.2	84.0	81.4	83.2	80.5
Clinical practice	33.7	29.9	36.6	33.0	34.9
Colleague contact	95.1	97.6	94.5	93.1	93.9
Educational films	77.5	76.8	77.9	75.2	75.3
Medical journals	96.4	96.9	96.5	95.6	96.3
Unsolic. med. lit.	77.0	77.0	77.4	78.3	75.4
Lib.-hospitals	83.5	87.2	75.8	91.2	86.6
Lib.-med. schools	60.5	64.0	56.3	57.9	64.4
Lib.-med. society	61.8	57.8	60.5	60.2	71.3
Lib.-personal	95.5	95.6	96.7	93.9	93.8
Audio recordings	67.5	71.1	68.0	69.5	60.2
Medical television	57.2	52.2	58.2	60.0	61.3
Medical radio	40.6	36.9	39.4	45.3	45.2
Lect.-loc. hosp.	74.5	78.4	67.9	83.9	73.6
Lect.-loc. med. soc.	85.6	91.3	87.2	77.2	79.3
Lect.-med. schools	59.4	63.2	54.3	63.6	60.0
Lect.-state med. assn	71.7	68.4	77.3	68.5	68.6
Lect.-nat'l med. org.	58.7	54.1	62.7	57.8	58.5
Correspond. courses	41.6	37.5	49.3	34.0	38.6

a method, but most of that support is found in the "available and used" column, it could mean that while physicians generally favor the method, little needs to be done about it (except to continue using it). On the other hand, if the greater contribution is derived from the "not available but needed" column, then positive program action may be indicated.

1. Methods Most Strongly Endorsed

The combined percentages in Table I-13 can be used to indicate the rank order of preference for specific methods of continuing education. Figure I-6 portrays this rank ordering graphically. It also shows how much of the combined proportion results from the "available and used" and "not available but needed" responses.

The three continuing education methods currently most widely used by Mountain States physicians are a combination of mass media, formal written communication, and individual personal contact:

- medical journals
- personal library
- contacts with colleagues

The next three most frequently used methods of continuing education can, in large part, be considered logical extensions of the first three: the first two of these may be classified as spoken or written communication and, thus, essentially mass media or semi-mass media techniques:

- lectures (local medical society)
- library (hospital)

The other method in this grouping involves personal, face-to-face contact and, although ranking sixth in combined proportions, it ranks much higher in the "not available but needed" category. Thus, a method of continuing education involving personal contact of considerable interest to physicians is:

- group discussion

Some of the methods appear to be available and used to the extent that physicians feel a need for them. Indeed, in some instances this factor is primarily responsible for the ranking of the method in the combined form, including those with the highest combined rank:

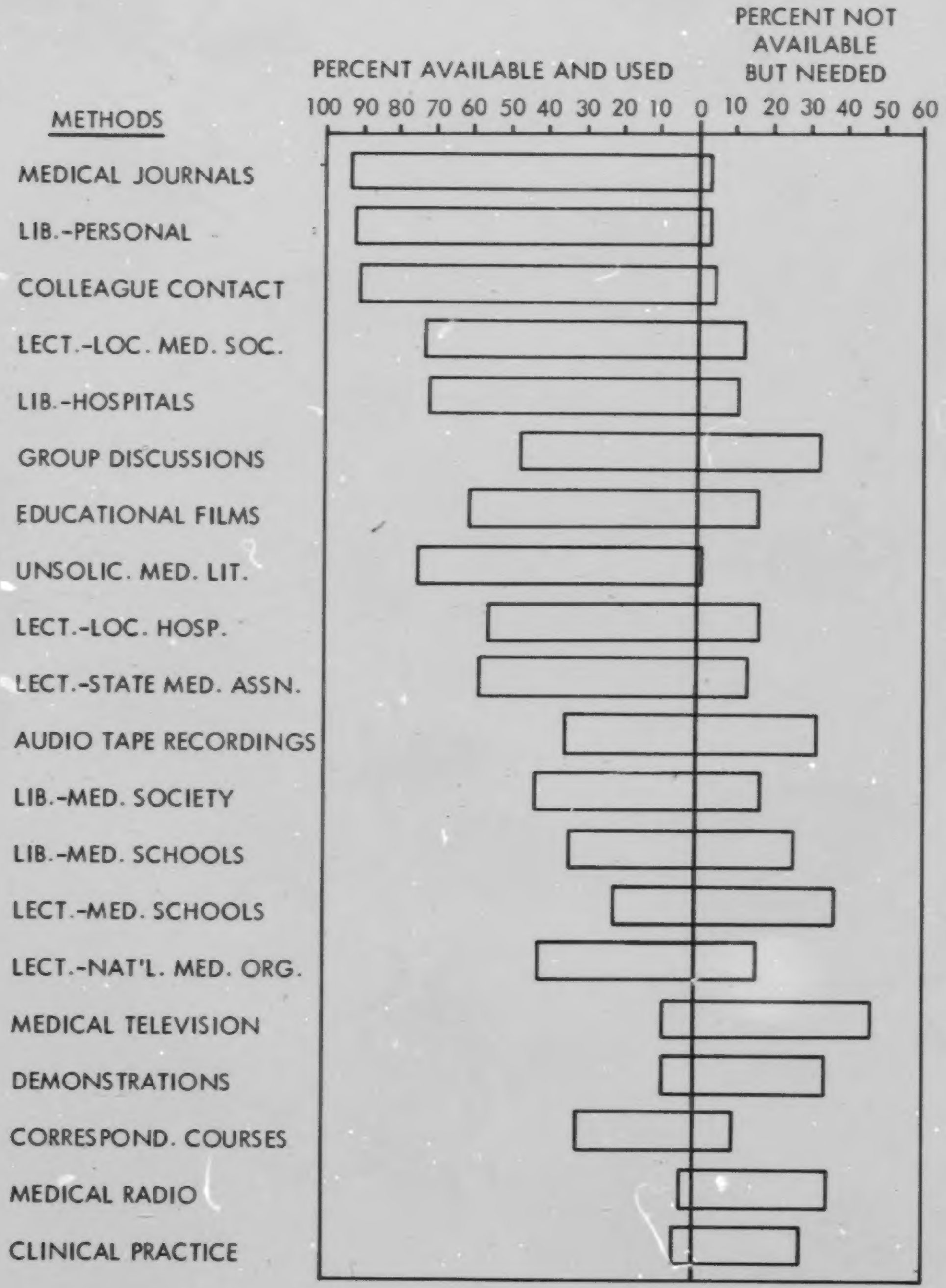

Figure I-6. Ranking of Support for Methods of Continuing Education As Reported by Physicians

- medical journals
- personal library
- contacts with colleagues
- unsolicited medical literature

Of greater interest in identifying educational areas in need of augmentation are those areas which show the highest "not available but needed" responses. Some of these show rather low combined rankings, largely because of their very low availability (and, by implication, use) in the Mountain States. Those in which Mountain States physicians show the greatest interest, regardless of their current availability, are:

- medical television (low availability)
- medical radio (low availability)
- medical school lectures (some availability)
- demonstrations (low availability)
- group discussions (moderate availability)
- audio recordings (moderate availability)

Each of these methods of continuing education would appear to possess considerable potential for increased development and distribution on the basis of the indicated interest of physicians. This is perhaps particularly true of two of the methods of contrasting approach and different combined rank:

- group discussion, a personal contact method, has a combined rank of 6 and "not available but needed" rank of 5
- medical television, a mass media method, ranked sixteenth on the combined basis but first on the "not available but needed" basis

2. Methods Preferred and Years of Active Practice

The data on preferred methods of continuing education were examined in an effort to identify any differences between physicians who had been in practice a short period of time and those who had been in practice longer. For the Region as a whole, it appears that there are differences between physicians who have been in practice for a relatively short period of time (zero to nine years) and the central tendency majority (about 68%) of the Mountain States physicians who have been in practice from 10 to 29 years.

Examination of Table I-14 and Figure I-7 leads to the following observations:

- For the three highest ranked methods of continuing education (medical journals, personal library materials, and contacts with colleagues) there are no apparent differences between physicians who have been in practice for a relatively short period of time and those who have been in practice for a much longer period of time.

- With regard to lectures, panels, and symposia sponsored by the local medical society (fourth rank), a relatively lower proportion (68.8%) of the physicians who have been in practice for less than ten years indicates that this method is available and used when compared with the proportion (74.5%) of physicians who have been in practice 10 to 29 years. Moreover, a higher proportion (15.8%) of the physicians who have been in practice for less than ten years indicate that this method is not available and needed, while a lower proportion (11.8%) of the physicians who have been in practice from 10 to 29 years indicate that this method is not available but needed.

- A similar pattern is found in the method ranked sixth, group discussions: Of the physicians in practice the shorter period of time, a relatively higher proportion indicates that this method is not available and needed and a somewhat lower proportion (47.3%) indicates that the method is available and used.

- The educational film, as a method of continuing education, is more widely supported by physicians who have been in practice the longer period of time: 81.3% indicate support as against 71.4% of the physicians in practice less than ten years.

- The only other notable differences that appear to be related to physicians' experience (as measured by years of active practice) are found in support for audio recordings, library materials from medical societies, and library materials from medical schools. For each of these methods, a higher proportion of physicians who have been in practice less than ten years indicates that they are not available but needed.

Table I-14. Needed Methods of Continuing Education According to Experience of Reporting Physicians

METHODS	REGION		IDAHO		MONTANA		NEVADA		WYOMING	
	Yrs of	Practice	Yrs of	Practice	Yrs of	Practice	Yrs of	Practice	Yrs of	Practice
	0-9	10-29	0-9	10-29	0-9	10-29	0-9	10-29	0-9	10-29
Demonstrations	36.9%	37.0%	35.0%	38.6%	33.0%	34.3%	51.6%	31.7%	37.5%	42.9%
Group discussions	38.3	33.0	32.8	36.7	41.1	31.0	35.5	19.4	42.5	40.0
Clinical practice	28.4	30.2	24.1	27.1	29.2	30.2	25.9	27.0	35.1	37.5
Colleague contact	4.0	4.6	3.3	7.5	5.5	3.4	3.2	2.9	2.5	3.2
Educational films	16.8	14.1	23.3	13.2	13.3	16.8	16.1	15.2	15.4	9.7
Medical journals	3.6	2.5	0.0	4.0	5.6	2.3	6.5	1.5	2.6	1.1
Unsolic. med. lit.	0.9	0.6	0.0	0.7	2.2	1.1	0.0	0.0	0.0	0.0
Lib.-hospitals	15.2	10.0	8.3	10.9	18.7	11.3	15.6	3.0	17.5	11.0
Lib.-med.schools	33.8	24.6	32.2	30.7	35.6	23.3	29.0	21.3	35.9	19.3
Lib.-med.society	26.7	15.7	27.3	17.3	27.3	18.2	24.1	11.9	26.3	11.4
Lib.-personal	3.6	2.1	1.7	2.7	3.3	1.1	9.4	0.0	2.5	4.2
Audio recordings	37.3	29.6	30.0	23.8	40.0	30.5	41.9	32.3	38.5	35.1
Medical television	50.7	49.8	45.9	48.3	45.6	44.8	51.6	55.6	69.2	57.3
Medical radio	36.1	39.3	26.7	39.7	38.6	35.1	43.3	36.7	39.5	47.9
Lect.-loc.hospitals	21.4	17.3	11.5	20.0	31.1	14.8	6.7	9.1	25.6	23.2
Lect.-loc.med.soc.	15.8	11.9	8.2	12.9	22.2	8.8	19.4	12.7	10.3	14.7
Lect.-med.schools	41.9	38.4	39.0	39.0	48.9	39.5	34.5	28.6	35.9	41.9
Lect.-state med.assn	13.4	13.9	6.9	15.2	15.7	11.8	19.4	12.5	12.8	16.5
Lect.-nat'l med.org.	18.2	17.6	10.9	19.0	23.0	16.8	23.3	12.7	13.5	20.7
Correspond.courses	11.7	10.3	7.1	5.5	15.3	11.9	14.3	8.6	8.3	15.7

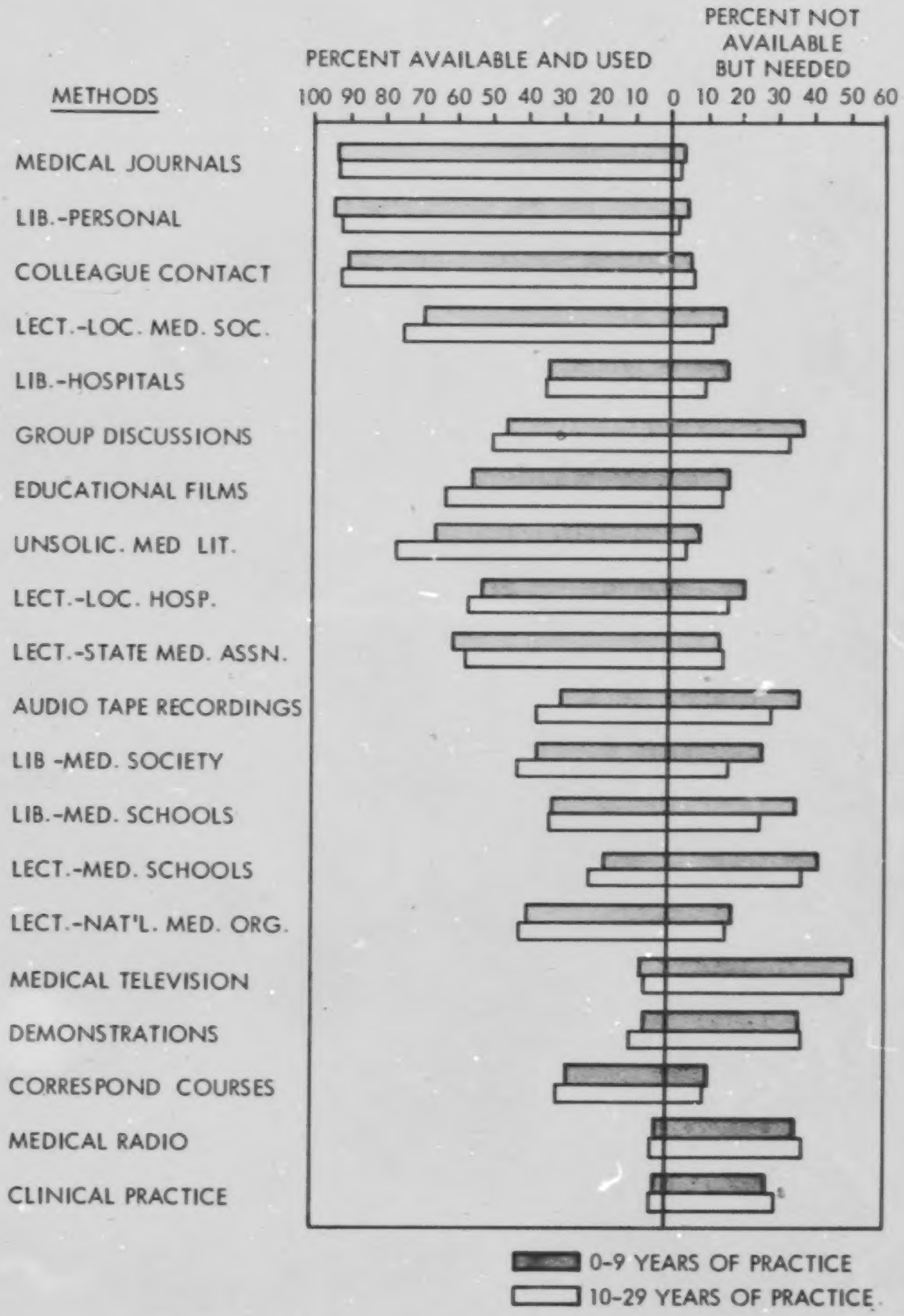

Figure I-7. Available and Needed Methods of Continuing Education According to Experience of Reporting Physicians

3. State Differences As To Preferred Methods

Individual state responses show some differences in overall support for a particular method of continuing education, or in one or the other of the factors contributing to this support. Where state differences do exist, they generally are to be found among the lower ranking methods and not among those methods for which support is more extensive. For example, among the ten top-ranked methods, only for lectures sponsored by the local medical society (fourth rank), library materials from hospitals (fifth rank), and lectures sponsored by local hospital (ninth rank), do there appear to be any real state differences.

- Lectures sponsored by the local medical society: on a regional basis about 85.6% (73.4% available and used and 12.2% not available but needed) indicate support for this method. However, 91.3% of the physicians in Idaho indicate support for this method (80.9% available and used, 10.4% not available but needed), while only 77.2% of the physicians in Nevada indicate such support (63.6% available and used, 13.6% not available but needed).

- Library materials from hospitals: on a regional basis about 83.5% (72.5% available and used, 11.0% not available but needed) indicate support of this method. Only 62.5% of the physicians from Montana indicate that this method is available and used, while 82.4% of the physicians in Nevada indicate that this method is available and used. However, 13.3% of the physicians in Montana indicate that the method is not available but needed while only 7.0% of the physicians in Nevada make this response. The implication here is that there appears to be much greater exploitation by physicians in Nevada of the method of continuing education through library materials from hospitals than by physicians from the State of Montana.

- Lectures sponsored by local hospitals: for the Region as a whole, 74.5% of the physicians support this procedure (57.4% available and used, and 17.1% not available but needed). However, only 48.8% of the physicians in Montana indicate that this method is available and used, as opposed to 75.9% for Nevada; 19.1% of the physicians in Montana indicate that the method is not available but needed, as against only 8.0% of the Nevada physicians. This suggests that lectures sponsored by local hospitals are more fully exploited by physicians in Nevada than by those in Montana.

Of the remaining methods of continuing education for which there appear to be differences between the states, four indicate potential sources for further exploitation. Each is highlighted briefly below:

- Audio recordings: the regional average is 67.5% (35.9% available and used, 31.6% not available but needed). The Idaho average is 71.1% (44.2% available and used, 26.9% not available but needed). The Wyoming average is 60.2% (25.2% available and used, 35.0% not available but needed). It would appear that the physicians in Idaho make proportionately greater use of this method of continuing education than do the physicians in Wyoming. It would also appear that this method is ripe for further exploitation, particularly in Wyoming.

- Lectures sponsored by medical schools: physicians in Nevada exploit this method of obtaining information in considerably higher proportion than do physicians in Montana. However, the very strong indication of need (41.8%) by physicians in Montana suggests a high priority for further exploitation of this method.

- Medical television and medical radio: while there are some differences among the states with regard to these methods for providing continuing education, the differences are largely obscured by the fact that in both cases they are hardly available and used and, most generally, not available but needed. Thus differences among the states are matters of degree and appear to be secondary to the more pressing indication that both of these methods are clearly susceptible to further exploitation.

E. HEALTH PROBLEM SUPPORT TO CONSUMER AND COMMUNITY

Physicians in the Mountain States Region, along with other health professionals, were asked to consider the teaching and support provided to patients and their families with respect to a number of health problems and to evaluate the quality of such support as excellent, good, fair, or poor. An average of about 740 physicians responded to each of these questions.

Physicians were also asked to indicate their assessment of certain procedures within the community in which they practice by indicating whether each of the following procedures was "satisfactory" or "unsatisfactory" in the community in which they practiced:

- Dissemination of information to the public concerning the prevention, diagnosis, treatment, and rehabilitation of heart disease, cancer, and stroke.
- Exchange of patient information among health agencies, welfare agencies, etc.
- Exchange of patient information among departments where they practiced.

About 830 physicians responded to these questions; specifically, 845 responded to the first, 820 responded to the second, and 833 responded to the third.

Data on health problems and health procedures are available for the Mountain States Region as a whole, and for each of the states. With regard to physicians' assessment of the quality of teaching and support to patients with health problems, data are also available for each zone within each of the states. The following comments are based on these types of data.

1. Consumer Health Problems

Table I-15 shows the way the physicians for the Region as a whole and for each state rated the teaching support provided for the patients and their families in the designated health problem areas. For analytical purposes, "excellent" and "good" have been combined, and "fair" and "poor" have been combined. Of the nine health problems, the top ranking six all received a rating of "good" or "excellent" from more than half the physicians (53.1% to 61.7%) in the Mountain States Region. Less than half (four out of ten) of the physicians in the Mountain States Region rate teaching support to be good or excellent to those patients and their families whose health problems are paralysis, bowel and bladder incontinence, and speech defects.

When each of the states is looked at individually, differences can be noted:

- The proportion of physicians in Wyoming who rate health problem support to be good and excellent is very low. Indeed, for each of the nine health problems, the lowest proportion of physicians who give the rating "good or excellent" is from Wyoming in all but two of the health problems (in these two the rank is next to lowest).

Table I-15. Quality of Teaching and Support Services as Reported by Physicians

RANK (Good and Excel.)	HEALTH PROBLEMS	REGION		IDAHO		MONTANA		NEVADA		WYOMING	
		Good and Excel.	Fair and Poor	Good and Excel.	Fair and Poor	Good and Excel.	Fair and Poor	Good and Excel.	Fair and Poor	Good and Excel.	Fair and Poor
3	Colostomy	58.2%	41.7%	54.1%	45.9%	63.3%	36.7%	60.2%	39.8%	53.2%	46.8%
5	Ileostomy	57.2	42.7	55.6	44.4	61.1	38.9	59.1	40.9	50.7	49.3
1	Special dietary needs	61.7	38.3	65.6	34.4	63.2	36.8	56.0	44.0	56.4	43.6
4	Amputations	57.6	42.4	60.0	40.0	59.6	40.4	54.0	46.0	52.5	47.5
9	Speech defects	39.7	60.3	41.4	58.6	47.4	52.6	27.6	72.4	29.5	70.5
7	Paralysis	41.7	58.3	45.4	54.6	42.8	57.2	42.7	57.3	33.1	66.9
8	Bowel/bladder incontinence	40.5	59.5	44.9	55.1	41.3	58.7	37.4	62.6	33.8	66.2
2	Tracheostomy	61.0	39.0	61.9	38.1	60.4	39.6	65.0	35.0	58.1	31.9
6	Limited physical activity	53.1	46.9	53.9	46.1	57.2	42.8	50.0	50.0	45.8	54.2

- The highest proportion of physicians who give the rating "good or excellent" is in Idaho and Montana.

- In Nevada, the highest proportion of physicians who give the evaluation "good or excellent" do so with regard to patients whose health problem is tracheostomy. The lowest proportion of "good or excellent" responses (27.6%) is with respect to support for patients who have speech defects.

A further breakdown of this index to the adequacy of patient support is provided in terms of zones within each state. Zone-by-state distributions are shown in Table I-16 and related to the regional ranking of the nine health problems. In Table I-16, if a zone figure is italicized it means that a higher proportion of physicians for the zone than for the state as a whole indicates "good or excellent" health problem support.

A rough summary of physician assessment of patient support by zone in each state can be obtained by rating zones as "above average" if the assessment of "good or excellent" is given for five or more of the nine health problems, and as "below average" if this assessment is made for four or less of the problems, as follows:

Idaho
- above average--Zones 3, 4, and 5
- below average--Zones 1, 2, 6, and 7

Montana
- above average--Zones 1, 3, and 5
- below average--Zones 2, and 4

Nevada
- above average--Zone 1
- below average--Zones 2, 3, 4, 5, and 6

Wyoming
- above average--Zones 4, and 6
- below average--Zones 1, 2, 3, and 5

2. Community Procedures

In the Mountain States Region, six out of ten physicians indicate that procedures are satisfactory with regard to the dissemination of information to the public concerning the prevention, diagnosis, treatment, and rehabilitation of heart disease, cancer, and stroke (see Table I-17). There are, however, some differences between the states with regard to these procedures:

- The highest proportion of physicians who indicate satisfactory procedures is in Montana, where 66.8% (213 of 319) indicate

Table I-16. Quality of Teaching and Support Services, According to Study Zone, as Reported by Physicians

Table 16. Quality of Teaching and Support Services, According to Study Zone, as Reported by Physicians

HEALTH PROBLEMS[1]		IDAHO								MONTANA						NEVADA							WYOMING						
	Region Average	State Average	Zone 1	2	3	4	5	6	7	State Average	Zone 1	2	3	4	5	State Average	Zone 1	2	3	4	5	6	State Average	Zone 1	2	3	4	5	6
Special dietary needs	61.7%	65.6%	10	15	*71*	*21*	*16*	13	1	63.2%	*46*	36	*46*	18	*38*	56.0%	*23*	1	3	0	1	28	56.4%	8	9	2	*21*	5	*38*
Tracheostomy	61.0	61.9	8	16	*69*	*19*	12	10	1	60.4	*43*	36	*36*	16	*40*	65.0	*26*	1	*6*	0	1	31	58.1	9	9	3	*20*	9	*33*
Colostomy	58.2	54.1	11	13	*54*	*15*	9	9	1	63.3	40	39	*38*	19	*40*	60.2	*20*	1	*5*	0	*2*	28	53.2	5	9	5	*17*	10	*29*
Amputations	[illegible].6	60.0	8	15	*63*	14	*14*	10	1	59.6	*41*	*39*	*36*	9	*37*	54.0	*19*	0	*5*	0	1	*26*	52.5	12	7	2	*17*	5	*32*
Ileostomy	57.2	55.6	10	*14*	56	*16*	9	8	1	61.1	37	37	*38*	17	*39*	59.1	*20*	1	*5*	0	1	28	50.7	5	9	5	*15*	8	*28*
Limited physical activity	53.1	53.7	7	12	*65*	*15*	10	7	1	57.2	36	37	*35*	15	*37*	50.0	*19*	0	3	0	0	*28*	45.8	9	8	2	*14*	9	*23*
Paralysis	41.7	45.4	2	7	*61*	12	*11*	5	1	45.4	*31*	27	*28*	7	*25*	42.8	*14*	0	1	0	0	*26*	42.7	*7*	4	2	*12*	3	*19*
Bowel/bladder incontinence	40.5	44.9	4	11	*55*	12	*10*	4	0	41.3	*28*	22	*24*	11	*29*	37.4	*15*	0	1	0	0	*18*	33.8	*7*	6	2	8	5	*18*
Speech defects	39.7	41.4	3	5	*49*	11	*16*	5	1	47.4	*39*	23	*33*	8	*33*	27.6	*15*	0	0	0	0	12	29.5	*6*	2	2	*11*	5	*16*

[1] The health problems are listed in rank order.

NOTE: Italics indicate a proportion of responses higher than the state average.

Table I-17. Satisfaction with Procedures as Reported by Physicians

PROCEDURES	REGION	IDAHO	MONTANA	NEVADA	WYOMING
Dissemination of information to the public	61.5%	63.2%	66.8%	58.4%	50.9%
Exchange of patient information between health agencies	51.7	57.8	60.0	60.9	41.0
Exchange of patient information between departments	80.0	82.0	79.5	78.4	78.8

that these procedures are satisfactory.

- Only 50.9% (83 of 163) of physicians in Wyoming indicate these procedures to be satisfactory.

- Between these extremes, 63.2% of the physicians in Idaho (158 of 250) and 58.4% (66 of 113) of the physicians in Nevada indicate these procedures are satisfactory.

Just over half--55.7% (457 of 820)--of the physicians in the Mountain States Region feel that procedures are satisfactory with regard to the exchange of patient information among health agencies, welfare agencies, etc. However, in three of the states, almost six out of ten physicians indicate that these procedures are satisfactory. Wyoming, where only 41.0% (66 of 161) of the physicians gave "satisfactory" responses, is the deviant state and, as such, it pulls the regional average down.

On an interdepartmental basis, at the place where physicians practice, the exchange of patient information among departments is rated relatively high, both on a regional basis, 80.0% (666 of 833), and on a state basis. State figures as to "satisfaction" in this area are as follows:

• Idaho:	82.0% (201 of 245)
• Montana:	79.5% (244 of 307)
• Nevada:	78.4% (91 of 116)
• Wyoming:	78.8% (130 of 165)

Thus, on a regional basis, a much lower proportion of physicians indicate that the procedures are satisfactory with regard to the exchange of patient information among agencies than for the exchange of patient information among departments where physicians practice. The single exception to this is in the State of Wyoming, where the exchange of patient information among agencies is rated satisfactory by the smallest proportion of physicians.

II. DENTIST

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A. INTRODUCTION

1. Sample Size and Distribution

Well over half (62%) of the one thousand and ten dentists in the Mountain States Region responded to the MS/RMP questionnaire. The response rate was highest in Wyoming (71.1%) and lowest in Nevada (55.4%). Table II-1 shows the response numbers and rates for the Region and for each of the four states. It also shows how the actual sample (625 dentists) is distributed among the states. The analysis and findings described in this report are based on this sample and distribution.

Table II-1. Dentist Sample Size for Region and States

STATE	TOTAL CONTACTED		TOTAL RESPONSES (SAMPLE)		
	NUMBER OF CONTACTS	REGION PROPORTION (%)	NUMBER OF RESPONSES	RESPONSE RATE (%)	REGION PROPORTION (%)
IDAHO	329	32.6	188	57.1	30.1
MONTANA	355	35.1	234	65.9	37.4
NEVADA	184	18.2	102	55.4	16.3
WYOMING	142	14.1	101	71.1	16.3
REGION	1,010	100.0	625	61.9	100.0

2. Highlights of the Analysis

- Most dentists in the Mountain States see about twice as many patients with known heart or hypertension conditions as they do patients with known cancer conditions.
- Four out of five Mountain States dentists express a need for continuing education in heart disease, cancer, and stroke.
- The great majority of dentists expressing the need for continuing education have been in active practice for more than 20 years.
- Dentists with fewer than 20 years of active practice are the most aware of their need for educational methods not available to them.

- Educational methods most desired by dentists, but not available to them, include demonstration clinics, medical television and radio, supervised clinical practice, and group discussions.

B. SELECTED PERSONAL AND PROFESSIONAL CHARACTERISTICS

In this section, a partial profile of the Mountain States dentist is drawn. The characteristics selected in developing this profile are those considered of particular relevance to the three major problem areas examined analytically in subsequent sections.

1. Age

What is the average age of the Mountain States dentist and how are dentists distributed throughout the Region and within the states in terms of age? These are questions of considerable interest, since the answer to them can be of assistance in identifying areas where continuing education programs are most likely to be needed and well received (that is, where there are concentrations of dentists who are young or in early middle age) or where early replacement of dentists may be anticipated (that is, where a preponderance of practitioners is in the older age groups).

a) Region. For the Region as a whole, the average age of dentists is 43.8 years, and two-thirds of all dentists are between the ages of 32 and 56 years.

b) Idaho. Idaho dentists average 43.4 years of age, and two-thirds of them are between 32 and 55 years of age. This distribution holds generally throughout the states.

c) Montana. Montana dentists average 46 years of age, slightly above the regional average. Two-thirds of them are between 33 and 59 years of age. All five Montana zones have dentists in practice who are over 70 years of age, and one zone (2) has the highest proportions of both older and younger dentists.

d) Nevada. This state deviates most from the regional norm. Nevada dentists average 39.3 years of age, 4.5 years under the Region as a whole, and from 4 to 6.6 years younger than those in the other states. Two-thirds of Nevada's dentists are between 30 and 48 years of age. It should also be noted that Nevada dentists are highly concentrated, with 46 in Zone 1, 52 in Zone 6, and only 4 in the other four zones.

e) Wyoming. Wyoming dentists average 44.5 years of age, and two-thirds of them are between 33 and 56 years of age. Internal distributions are fairly consistent with these figures, even in those zones (4 and 6) having the heaviest concentration of dentists.

2. Years of Active Practice

Another factor of possible influence on both need and interest in continuing education and on patient referral practices is the experience of the practitioner himself. This can be an extremely complex factor to measure, of course, but for the purposes of this analysis the single indicator of the total number of years in active practice will be used. This factor will be related to a number of other factors in later sections of the analysis.

a) Region. The average Mountain States dentist has been working at his profession nearly 17 years; two-thirds of all dentists fall within a range of 4 to 30 years.

b) Idaho. Average years of active practice is 15.8, and two-thirds of all dentists in Idaho have been practicing between 4 and 28 years. Internal distribution is quite consistent, with one possible exception: while other zones show 75% or more of their dentists with less than 20 years of experience, Zone 2 has only 61% of its dentists in this category. In this zone, 22% have been practicing for more than 30 years.

c) Montana. The average Montana dentist has been in practice just over 19 years, and two-thirds have between 6 and 33 years of active practice. Nearly 27% of Montana's dentists have more than 30 years of practice, compared to about 18% for the Region as a whole. Zone distribution is quite consistent with state averages except in Zone 2, where over 30% have been practicing more than 30 years (against 20% or under for the other zones).

d) Nevada. In years of active practice (as with respect to age), Nevada dentists deviate most from the regional average: average years of active practice is just over 12 years, with two-thirds of the dentists having between 3 and 21 years of active practice. Nearly half of Nevada's dentists have been practicing for less than 10 years, and 76% or more in all zones have had less than 20 years of active practice. Only six dentists in the entire state have been in practice for more than 30 years.

e) Wyoming. Average years of active practice is 18.4, and two-thirds of the dentists have been in practice between 5 and 32 years. There is a somewhat higher concentration of dentists in the middle of the range (20 to 30 years of practice) in all Wyoming Zones, except for Zone 1 which has no cases in this category.

3. Type of Practice

Whether or not a health professional is a specialist or is in general practice may be expected to have some effect on his need for, and desire for, additional training or education, and on the kind of continuing education of most use to him. For example, a specialist may have only very moderate need for education in heart disease, cancer, or stroke, either because he is already specializing in one or more of the areas, or because his primary area of specialty is far removed from the diseases of concern. On the other hand, a busy general practitioner may have a strong need and desire for help in keeping up with developments in these fields. For the Mountain States dentists, distribution according to specialization is described below.

a) Region. The vast majority of responding Mountain States dentists (87.5%) describe their practice as general dentistry. The remaining 12.5% (a total of 77) concentrate primarily in three areas of specialization in dentistry:

- orthodontics: 38 cases
- pedodontics: 16 cases
- oral surgery: 9 cases
- other: 14 cases

Within the states the few specialists tend to be concentrated in a relatively few zones. Because of the extremely small size of the sample, the breakdown by state and zone is meaningful only if all specialists are included in one category.

b) Idaho. A total of 24 specialists, almost half (11) in Zone 3.

c) Montana. A total of 26 specialists, of whom 16 are in two zones (8 each in Zones 3 and 5).

d) Nevada. A total of 23 specialists, of whom 10 are in Zone 1 and 9 in Zone 6. (This means that each of the responding dentists in the other zones is a specialist.)

e) Wyoming. A total of eight specialists, of whom four are in Zone 6.

4. Nature of Clinical Practice

In addition to the distinction between general and special dentistry, the overall nature of a dentist's clinical practice itself may be expected to influence his need and desire for additional or specialized training. In the space of a year, how many patients does a dentist see whom he knows to be suffering from heart disease, hypertensive disorders, or cancer? As a dentist, to what extent does he perform oral cytology or oral biopsy? How are these dentists distributed in terms of location of practice, experience, etc.? Answers to these questions will be found in the following section.

a) Region. The figures in Table II-2 show that, for the Region as a whole, Mountain States dentists see more than twice as many patients with known heart disease (30.3 cases per year) and hypertension (30.0 cases per year) than they do patients with cancer (13.2 cases per year). State distributions generally reflect the regional patterns quite closely, even to the rather curious nature of the distribution itself. For example, the single heaviest concentration in all cancer distributions is at the lowest end of the scale--i.e., most dentists see very few cases--and the frequencies tail off to zero very rapidly. However, the distribution of known heart disease and hypertension cases seen is quite different. Like the cancer cases, there is a concentration at the lower end of the scale and a rapid tailing off; unlike cancer cases, however, there is a sizeable concentration of cases seen at the upper end of the scale. In other words, most dentists see relatively few cases of heart disease or hypertension (under 30 cases per year), but some dentists see

Table II-2. Heart Disease, Hypertension and Cancer Patients Seen by Dentists Per Year

Condition	Number of Dentists Reporting	Average Number of Cases Seen Per Dentist Per Year
Heart Disease	487	30.3
Hypertension	419	30.0
Oral Cancer	350	4.0
Cancer of Head/Neck	162	3.1
Other Cancer	112	6.1

Table II-3. Heart Disease Patients Seen by Mountain States Dentists

NUMBER OF PATIENTS	REGION	IDAHO	MONTANA	NEVADA	WYOMING
under 10	18.5%	17.9%	19.8%	23.8%	11.1%
10 - 19	24.4	21.4	23.7	23.8	32.1
20 - 29	22.0	24.1	22.0	10.7	29.6
30 - 39	6.4	5.5	6.8	8.3	4.9
40 - 49	4.3	2.8	3.9	3.6	8.6
50 - 59	11.1	12.4	10.7	11.9	8.6
60 - 69	0.8	1.4	0.6	1.2	0.0
70 & over	12.5	14.5	12.4	16.7	4.9

Table II-4. Hypertension Patients Seen by Mountain States Dentists

NUMBER OF PATIENTS	REGION	IDAHO	MONTANA	NEVADA	WYOMING
under 10	25.8%	22.4%	27.7%	24.6%	29.7%
10 - 19	25.1	28.4	25.0	24.7	18.8
20 - 29	13.6	13.4	9.5	13.7	23.4
30 - 39	5.7	6.7	6.8	2.7	4.7
40 - 49	4.1	5.2	2.0	5.5	4.7
50 - 59	10.0	6.0	15.5	6.8	9.4
60 - 69	1.4	1.5	1.4	1.4	1.6
70 & over	14.3	16.4	12.2	20.6	7.8

Table II-5. Patients With Signs of Cancer Seen by Mountain States Dentists

NUMBER OF PATIENTS	REGION	IDAHO	MONTANA	NEVADA	WYOMING
Signs of Oral Cancer					
1 - 2	52.6%	52.3%	47.2%	61.3%	55.4%
3 - 4	24.0	26.6	27.6	14.5	21.4
5 - 9	12.9	11.0	15.4	8.1	16.1
10 +	10.1	9.8	16.1	7.2	10.9
Signs of Head & Neck Cancer					
1 - 2	69.1	67.3	67.4	77.1	65.4
3 - 4	16.4	19.6	8.6	30.8	17.9
5 - 9	5.6	5.5	8.7	5.7	0.0
10 +	7.4	10.9	4.3	8.6	3.9
Signs of Cancer in Other Areas					
1 - 2	50.0	47.2	52.5	48.0	54.5
3 - 4	18.8	19.4	15.0	20.0	27.3
5 - 9	10.7	13.9	10.0	8.0	9.1
10 +	20.5	19.5	22.5	24.0	9.1

quite a few (over 70 cases per year). Tables II-3, II-4, and II-5 show the distribution of dentists for the region and for each state in terms of the number of patients seen per year with each disease condition. Additional state comments are made below:

b) Idaho. More dentists see some cases of all diseases, and more dentists see many cases of all diseases, in Zone 3. Zone 7 is lowest in all.

c) Montana. Zones 2 and 5 are about equal as "highs" in Montana. Zone 1 follows close behind.

d) Nevada. As expected, concentrations in Nevada are in Zones 1 and 6.

e) Wyoming. The zone ranking highest for all disease categories is Zone 6, although Zone 4 is well represented.

As one means of probing a little deeper into the dentists' clinical experiences with diseases relevant to the RMP, each was asked if, in the course of his dental practice, he performed oral cytology or oral biopsy as a means of diagnosis.

For the Region as a whole, one out of five of the responding dentists said that they did perform oral cytology, and nearly half of them (45.9%) said that they performed oral biopsies. As Table II-6 clearly shows, Wyoming is a marked exception from the other states for oral biopsies, with 58.1% of dentists indicating performance. Wyoming dentists also perform many more diagnostic oral cytology tests than any of the other dentists in the Region, just under half (49.5%) indicating performance. On the other hand, Idaho dentists perform in this area at about half the regional rate, only 10.2% of the dentists in Idaho indicate performance. The other states are fairly close to the regional performance level in both areas.

Table II-6. Extent and Distribution of Performance of Oral Cytology and Oral Biopsy by Dentists

TEST	IDAHO (%)	MONTANA (%)	NEVADA (%)	WYOMING (%)	REGION (%)
Oral Cytology	10.2	15.4	18.4	49.5	19.7
Oral Biopsy	42.0	43.4	46.9	58.1	45.9

C. NEED FOR CONTINUING EDUCATION

Dentists were asked to assess their own perceived needs for more education and/or information concerning heart, cancer, and stroke conditions as related to their own practices. In this section their responses to these questions are examined in terms of geographic distribution (state or zone) and other selected characteristics of the dentists.

1. Expressed Need

For the Region as a whole, better than four of every five responding dentists (over 80% in each case) indicate a need for information or education in all three clinical fields. By and large, the states show approximately the same breakdown. Recognizing that in many cases we are dealing with very small numbers at the zone level, the following descriptive summary will attempt to pinpoint locations in the states where the need for continuing education by dentists is expressed most frequently.

a) Idaho. All the zones in Idaho follow the regional distribution quite closely, except for Zone 7, where 100% of the dentists said they needed education in all three clinical areas (but it should be noted that there were only four responding dentists from this zone). Fewer dentists in Zone 2 indicated need (74%) in the cancer area and in Zone 4 more indicated need (91%) for stroke information than the state averages would suggest.

b) Montana. Zone 1 shows a high proportion of dentists needing education in cancer (91.8%) and stroke (91.4%) conditions.

c) Nevada. Zones 1 and 6 (with all but four of the responding dentists) indicate that 29% and 26%, respectively, have no need for stroke education--a response much higher than the regional figure (18.6%). Zone 1 also has more dentists who say that they have no need for cancer education: 23.2% as compared to 16.2% for the Region.

d) Wyoming. The Wyoming dentists' response was almost identical to response in the Region for cancer and stroke, and just a bit higher than the Region with respect to heart disease. By zone, however, there is considerable variability. Thus, in Zone 1, 100% of the dentists show a need for heart and stroke education, but one out of every six reports he does not need cancer education. In Zone 4 nearly 95% indicate a need for heart education and 90% for stroke training. Zones 2 and 3 show about 90% interest each in cancer education. About 27% of Zone 6 dentists assert no need for stroke training.

2. Factors Affecting Need for Education

a) Experience (Years of Active Practice). Mountain States dentists, as a group, display a very high interest in obtaining more information and training in the heart disease, cancer, and stroke clinical areas, as noted above. For the most part, this high interest is manifested by dentists throughout the Region and for all levels of clinical experience as measured by the number of years in active practice. Some differences are observed, however, in the responses of dentists to each of the clinical areas when these responses are examined in terms of the number of years that the responding dentists have been practicing.

- Heart Conditions

  On a regional basis, 84.3% of the dentists express interest in education in this area. However, dentists with the least experience indicate a higher than average need for such education. Specifically, dentists with fewer than 20 years of active practice are above regional average (0 to 9 years of active practice, 87.2%; 10 to 19 years, 85.1%), and all dentists with more than 20 years of practice are below the regional average.

- Cancer Conditions

  All experience groups of dentists show very similar high responses to interest in education in the cancer area. The regional average of 83.7% is exceeded only by the least experienced group (zero to nine years of practice) and only by one percentage point (84.7%). None of the other groups are below the regional average by more than three percentage points.

- Stroke Conditions

  The greatest variation in educational interest is found for stroke, in so far as dentist experience is concerned. Overall interest is high (regional average is 81.1%), but the range is wide: from 86.8% for those with under 10 years of practice, to 69.6% for those with more than 30 years of practice.

b) Specialization. There are few specialists in the dental field in the Mountain States (only 12.5% of all respondents). These specialists are split almost equally between those who express a need and those who say they have no need. There is no discernible distinction from one disease condition to another.

c) Clinical Practice: Exposure to Disease Conditions. Among the ways in which an expressed need for continuing education may be assessed is in terms of its relationship to the actual clinical practice of the professional, as stated by him. For the dentist, this may be accomplished by looking at the distribution of those who assert a need for more education or information concerning heart, cancer, and stroke conditions, in terms of the extent to which these conditions are encountered in actual practice.

- Heart Condition

Of the 349 dentists in the Region who responded that they had seen patients with known heart conditions during the preceding year, only 47 (13%) indicate that they have no need for education or information about heart disease. Of those who do want to learn more about heart disease, about half had seen from 10 to 25 patients with heart conditions in the preceding year. Nearly all of those who had seen 35 or more patients with heart disease state a need for education (47 have need vs. only 4 in this category who have no need). The state distributions follow this pattern closely.

- Hypertension

There are 297 dentists who had seen patients with hypertension during the preceding year and who responded to the question concerning need for more education and information in the whole field of stroke conditions. Only thirty-four of these (11%) say they have no need. Half of those expressing a need for education in stroke had seen from 5 to 20 patients with hypertensive conditions in the year preceding. Also, nearly all dentists who had seen 35 or more patients with these conditions state a need for such education (38 with need vs. only 2 who have no need). The Region distribution is repeated closely in each of the states.

- Cancer

Cancer cases seen by dentists during the preceding year were broken down into three different categories. Due to the relatively small number of cases overall, these three have been combined for analysis purposes into one general cancer category. This provides a total dentists number that is a composite of the three categories and does not necessarily refer to individual dentists, since undoubtedly there are dentists who saw cases in each of the categories and thus are counted three times here. For purposes of giving a general picture of the relationship between seeing such cases and having a need for education or information in the cancer area, however, this approach will serve, if the following distributions are kept in mind:

Oral Cancer: Two hundred and ninety-four dentists who had seen such cases expressed a need for education; 37 dentists who had seen them nevertheless feel no need for more information.

Head/Neck Cancer: One hundred and thirty-five seeing such cases express educational need, as against 15 who do not.

Other Cancer: Ninety-six seeing such cases express educational need; 11 do not.

In summary, 11% of those who saw cancer cases during the preceding year did not feel a need for any special education in the cancer areas; all the rest did. Generally, no more than two such cases were seen by these dentists. States follow Region closely.

d) Clinical Practice: Performance. The question could be raised as to the relationship between expressed need for education or information in cancer conditions and whether or not the dentists performed oral cytology and oral biopsy.

- Oral Cytology

The major finding of significance here is that of dentists who do not feel a need for cancer education, a majority did not perform oral cytology. Only ten who did perform say that they have no education need, while 70 who did not perform say that they have no need. This has nothing to do with the general distribution of need for education, for better than eight out of ten dentists who do not perform oral cytology do feel a need for cancer education as against nine out of ten of those who do perform.

- Oral Biopsy

Findings in this area are similar to those for oral cytology, although not as marked. Thus, while 53 dentists who did not perform oral biopsies assert no need for cancer education, 30 of those who did perform such procedures also say they need no education. On the need-for-education side, there is little difference in terms of biopsy performance. In both groups, 75% to 80% or better wanted more education through the Region and in each of the states.

DESIRED METHODS AND PROCEDURES OF CONTINUING EDUCATION

In an effort to elicit information as to the most used and/or most preferred techniques and methods of continuing education, dentists were asked to indicate which of a specified list of methods and techniques were available to them and used by them, and which were not available but needed by them. In this section, the responses to each of these questions are examined in terms of selected characteristics of the responding dentists. State and Region response distributions are shown in Tables II-7 and II-8 and in Figure II-1.

1. Methods Currently Used.

Based on their own responses, the most commonly available and used methods by dentists throughout the Mountain States Region are as follows:

• dental journals	86.4%
• personal library	79.9%
• contacts with colleagues	77.4%
• unsolicited dental literature	72.9%
• lectures and symposia sponsored by state dental society	64.7%
• lectures and symposia sponsored by national dental organization	64.5%
• dental society library	54.1%

The distribution of dentists' responses to these methods is uniform throughout the Region and among the states, with the exception of the last two methods listed above: in Nevada, a significant proportion of dentists (one out of three) claims library materials from dental societies are not available; in Montana, a proportion of dentists slightly greater than the regional average states that lectures and symposia sponsored by the national dental society are not available.

The use of various methods of continuing education by dentists was examined in terms of the total number of years of active practice that each had accumulated. Little variation in methods used was found to exist on this basis within the Region or within the states. There was, however, a noticeable but slight tendency for dentists with fewer years of active practice to make use of all methods to a greater extent than dentists with many years of active practice. Likewise, it appears that (to a very slight extent) it is the dentists with less experience who are most concerned, in Montana, with the inadequacy of dental society library materials.

Table II-7. Availability and Use of Methods of Continuing Education As Reported by Dentists

METHODS	REGION		IDAHO		MONTANA		NEVADA		WYOMING	
	% Avail. and Used	% Not Avail. but Needed	% Avail. and Used	% Not Avail. but Needed	% Avail. and Used	% Not Avail. but Needed	% Avail. and Used	% Not Avail. but Needed	% Avail. and Used	% Not Avail. but Needed
Demonstrations	22.7	52.9	21.6	50.3	18.6	54.9	28.6	55.3	28.2	49.4
Group discussions	28.0	47.2	29.4	45.8	23.4	46.2	39.5	47.7	24.7	51.6
Clinical practice	7.6	50.8	9.0	47.0	3.0	54.5	15.0	46.3	7.3	53.8
Colleague contact	77.4	12.0	81.3	9.0	74.1	13.5	78.9	13.3	75.9	12.7
Educational films	37.9	24.9	39.6	23.5	31.7	28.6	48.6	22.1	37.3	21.7
Dental journals	86.4	2.9	88.1	2.5	82.9	2.4	90.4	3.2	87.2	3.5
Unsolic. dent. lit.	72.9	5.4	74.6	5.2	71.6	6.8	74.5	5.2	70.4	4.8
Lib.-hospitals	31.4	26.9	32.8	30.5	30.8	22.5	31.6	29.1	30.0	28.6
Lib.-dent. schools	29.2	26.6	36.2	23.4	23.5	25.4	32.9	29.4	24.3	31.4
Lib.-dent. society	54.1	22.1	64.1	17.6	50.0	19.7	45.8	33.7	53.9	23.7
Lib.-personal	79.9	7.8	77.1	10.4	81.5	5.6	80.7	10.2	80.8	5.1
Audio tape recordings	39.7	27.5	44.4	26.1	41.8	24.8	36.4	31.2	29.3	32.0
Dent. television	5.3	51.7	3.0	51.1	4.1	49.7	8.1	56.1	9.9	50.7
Dental radio	3.3	42.8	2.3	40.5	1.9	43.1	5.6	45.1	5.9	44.1
Lect.-loc. hosp.	23.4	42.6	25.9	45.9	23.6	34.5	21.6	55.4	20.0	42.7
Lect.-loc. dent. soc.	44.7	24.8	51.0	20.6	30.0	31.1	67.4	18.5	41.7	13.1
Lect.-dent. schools	24.8	24.3	27.0	23.4	15.7	23.9	42.0	14.8	21.3	37.3
Lect.-state dent.assn	64.7	21.0	70.4	16.4	58.3	24.7	68.2	17.0	64.2	25.9
Lect.-nat'l dent.org.	64.5	15.9	72.4	11.9	56.5	21.1	70.7	9.8	60.5	18.4

Table II-8. Extent of Support for Methods of Continuing Education as Reported by Dentists

METHODS	REGION Combined % Avail. & Used, Not Avail. but Needed	IDAHO Combined % Avail. & Used, Not Avail. but Needed	MONTANA Combined % Avail. & Used, Not Avail. but Needed	NEVADA Combined % Avail. & Used, Not Avail. but Needed	WYOMING Combined % Avail. & Used, Not Avail. but Needed
Demonstrations	75.6	71.9	73.5	83.9	77.6
Group discussions	75.2	75.2	69.6	87.2	76.3
Clinical practice	58.4	56.0	57.5	61.3	61.1
Colleague contact	89.4	90.3	87.6	92.2	88.6
Educational films	62.8	63.1	60.3	70.7	59.0
Dental journals	89.3	90.6	85.3	93.6	90.7
Unsolic. dent. lit.	78.3	79.8	78.4	79.7	75.2
Lib.-hospitals	58.3	63.3	53.3	60.7	58.6
Lib.-dent. schools	55.8	59.6	48.9	62.3	55.7
Lib.-dent. society	76.2	81.7	69.7	79.5	77.6
Lib.-personal	87.7	87.5	87.1	90.9	85.9
Audio tape recordings	67.2	70.6	66.6	67.6	61.3
Dental television	57.0	54.1	53.8	64.2	60.6
Dental radio	46.1	42.8	45.0	50.7	50.0
Lect.-loc. hosp.	66.0	71.8	58.1	77.0	62.7
Lect.-loc. dent. soc.	69.5	71.6	61.1	85.9	54.8
Lect.-dent. schools	49.1	50.4	39.6	56.8	58.6
Lect.-state dent. assn	85.7	86.8	82.9	85.2	90.1
Lect.-nat'l dent. org.	80.4	84.3	77.6	80.5	78.9

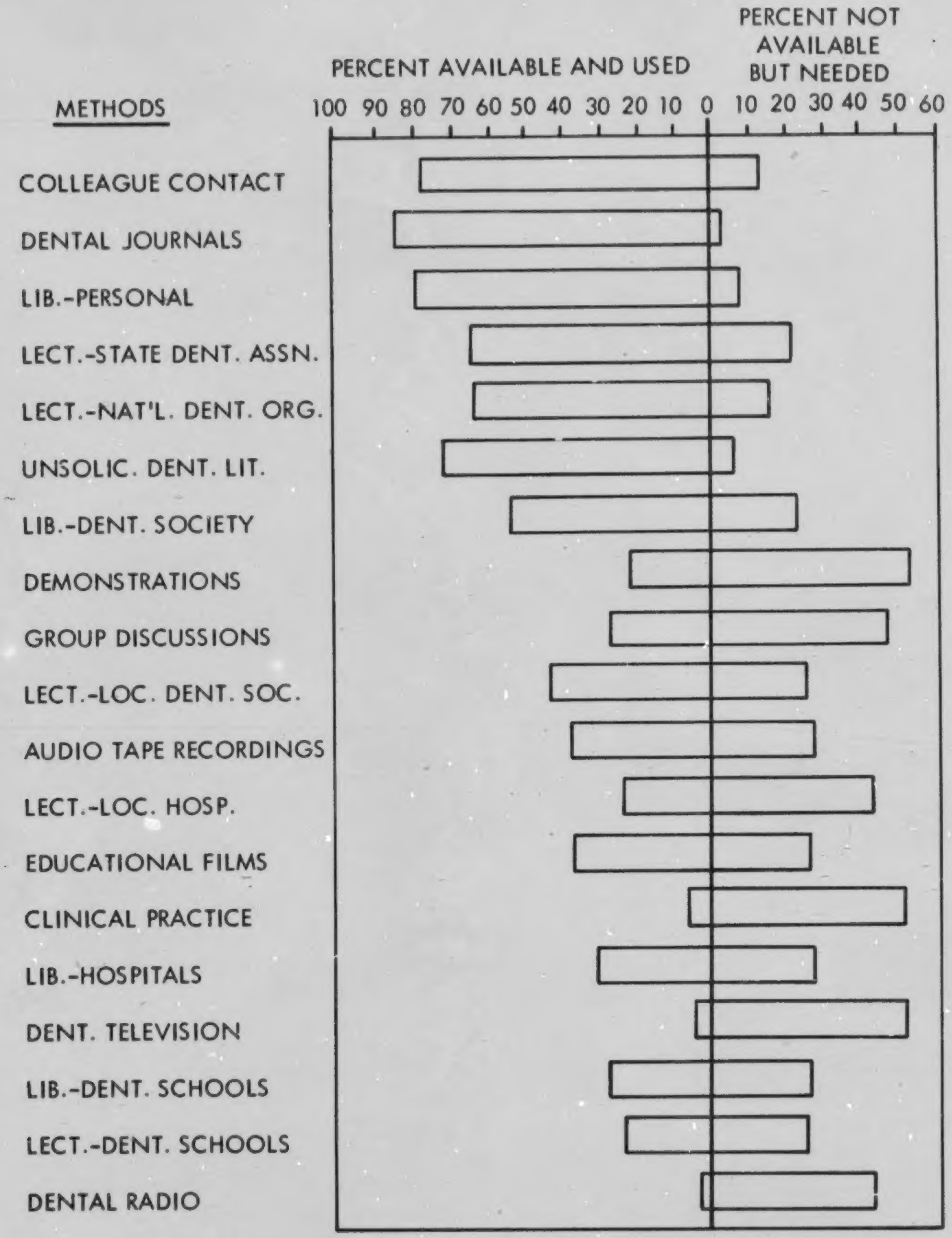

Figure II-1. Ranking of Support for Methods of Continuing Education As Reported by Dentists

There were only 77 specialists (12.5% of the total responding) in the entire Region, and in three of the states specialists represented less than 10% of all dentists. In the fourth state--Nevada--about 15% of the dentists were in specialized practice. From a purely descriptive point of view, it would appear that dental specialists make use of educational materials available to them to a slightly greater extent than do those who practice general dentistry.

2. Methods Needed or Desired.

Dentists were also asked to indicate methods of continuing education that were not available to them but that they felt they needed to maintain currency in their practices. Those most frequently mentioned by Mountain States dentists were:

• demonstration clinics	52.9%
• medical television	51.7%
• supervised clinical practice	50.8%
• group discussions	47.2%
• medical radio	42.8%
• lectures and symposia sponsored by local hospitals	42.6%

Generally speaking, the expressed need for these six methods of continuing education is uniformly distributed among the dentists in the Region and in each of the states, with one minor exception. In the sparsely populated states of Nevada and Wyoming, lectures and symposia sponsored by local hospitals are not as commonly available as in the other states and are considered needed to a slightly greater extent than in the other states.

In terms of differences in the amount of time a dentist has been in active practice and his preference for continuing education methods, the same pattern prevails as for actual use of available methods. For the most part, it is dentists with less than 20 years of active practice who are most aware of their need for methods that are not available to them. Dentists with more than 30 years of active practice tend either to be unaware of method unavailability or to feel that they do not need the unavailable methods.

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Dental specialists, few though they may be, generally appear to have available all the continuing education methods they feel they need. In three of the states, specialists constitute far fewer than 10% of the dentists who express need for unavailable methods. In Nevada, however, specialists who consider themselves to be deprived constitute nearly 20% of all Nevada dentists who are similarly deprived. This proportion holds for all five of the top ranking unavailable but needed methods.

III. HOSPITAL ADMINISTRATOR

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A. INTRODUCTION

1. Sample Size and Distribution

Two out of three Mountain States hospital administrators (66%) responded to the MS/RMP questionnaire. The response rate was highest in Wyoming (92%) and lowest in Idaho (54%). Table III-1 shows the response number and rates for each state and the Region. It also shows how the actual sample was derived by eliminating all administrators of facilities other than hospitals, and how the resulting 131 hospital administrators are distributed among the states. The analysis and findings described in this report are based on this sample and distribution.

Table III-1. Hospital Administrator Sample Size for Region and States

STATE	TOTAL CONTACTED (1)		TOTAL RESPONSES (2)		ACTUAL SAMPLE SIZE (3)	
	NUMBER OF CONTACTS	REGION PROPORTION (%)	NUMBER OF RESPONSES	RESPONSE RATE (%)	NUMBER	REGIONAL PROPORTION (%)
IDAHO	94	33.6	51	54.3	35	26.7
MONTANA	111	39.6	71	64.0	46	35.1
NEVADA	24	8.6	17	70.8	16	12.2
WYOMING	51	18.2	47	92.2	34	26.0
REGION	280	100.0	186	66.4	131	100.0

(1) Includes all administrators of hospitals, nursing homes, extended care facilities, etc.

(2) Includes all respondents, regardless of type of facility administered.

(3) Includes only administrators of hospitals.

2. Highlights of the Analysis

- Only one out of three Mountain States hospital administrators is a member of the American College of Hospital Administrators.

- More than two out of three administrators express the need for additional training in areas related to administrative functions.

- Most hospital administrators (nine out of ten) feel that the educational procedure most needed by their staffs is educational television.

- Other educational procedures administrators rank high among those needed in their facilities are educational radio, programmed instruction, and special classes conducted in the hospital.

- According to hospital administrators, the principal factors inhibiting staff participation in continuing education programs outside the local community are lack of replacement personnel and family responsibilities.

- Holding classes closer to home and payment of expenses would encourage hospital staff members to participate more fully in programs of continuing education.

- Although more than half of the hospital administrators feel that there is adequate classroom space for staff training, less than half of them feel that their equipment for conducting such training is adequate.

- Only one hospital in the entire Region has a full-time medical staff member to conduct continuing education for the medical staff.

- About one-third of the Region's hospitals have training personnel available, largely on a part-time basis, to work with employees who are members of the allied health professions.

- Teaching and other support provided patients and their families in selected health problem areas is not considered uniformly excellent or even good by Mountain States hospital administrators.

- A substantial number of administrators do not feel that local community procedures for disseminating information to the public or for inter-agency exchange of patient information are satisfactory. (They do feel, however, that information exchange within their own facilities is satisfactory.)

B. SELECTED PERSONAL AND PROFESSIONAL CHARACTERISTICS

1. Age

One hundred and twenty-one hospital administrators in the Region responded to the question asking for information on their ages. The average age of these respondents is just over 46 years (46.2). Approximately two-thirds of the responding MS/RMP hospital administrators are between the ages of 37 and 55 years. Two states deviate somewhat from the regional distribution (in opposite directions from one another). Thus, as a group, the youngest hospital administrators are found in Wyoming, the oldest in Nevada. It is also interesting to note that Nevada has the widest spread: two-thirds of the Nevada administrators are between the ages of 38.6 and 59.8, a range of just over 21 years.

2. Years of Active Practice

The average Mountain States hospital administrator has been working at his profession between nine and ten years. Approximately two-thirds of the 116 administrators who responded to this question indicate that the total length of time they have been employed as hospital administrators falls somewhere between two and sixteen years. Individual state responses are generally similar, with two minor exceptions: Idaho administrators show an average of one year less experience (8.3 years) and Nevada administrators show an average of one year more experience (10.2 years) than the average of the Region as a whole (9.2 years). On the other hand, Wyoming administrators show the greatest spread of all four states in terms of years of experience: two-thirds of the Wyoming administrators have been in practice between 1.3 years and 18.5 years, a range of just over 17 years. Montana administrators, with an average of 9.1 years of experience and a two-thirds range of 13 years, closely approximate the regional distribution.

3. Type of Practice

With respect to the hospital administrator, this question is to be regarded from a different viewpoint. At issue is not the "type of practice" of the administrator himself, but the type of practice conducted in the facility he administers. The great majority of Mountain States hospital administrators characterize their facilities as General Hospitals. Of the 128 administrators who responded to this question, only 10 (7.8%) indicate that they are administrators of a facility other than a General Hospital. Of these, four administer Psychiatric Hospitals and the remaining six head other specialized hospital facilities. Five of the non-General Hospital administrators were found in Idaho (out of a total of 35), three in Wyoming (out of 31), and one each in Montana (total of 46) and Nevada (total of 16).

It should be noted that administrators of nursing homes and similar extended care facilities have not been included in the totals given here. While such health professionals were included in the survey, the total response for the Region was only 55. Because of the smallness of this subsample, and because preliminary analysis showed this group to have little in common with hospital administrators as such, they were eliminated to avoid sample confusion and resulting analytic ambiguity.

4. Membership in Professional Society

MS/RMP hospital administrators were asked whether or not they were members of the American College of Hospital Administrators. Just over one-third (35.5%) of the 124 administrators who responded to this question indicate that they are members. This means that nearly two-thirds of MS/RMP hospital administrators do not belong to their national professional society. By and large, the state distributions are similar to the regional distribution with no significant differences. Within the states, however, some rather interesting zone distributions can be seen, although in most cases the numbers are so small that it is not possible to attach any significant statistical interpretations to these differences. The following comments are intended to be purely descriptive and are presented as a matter of general interest.

- Idaho: Little difference from zone to zone. (Zone 7 indicates no membership--but there is only one respondent from that zone.)

- Montana: Of the six respondents from Zone 2, three are members and three are not (a 1 to 2 ratio instead of the prevailing regional 1 to 3 ratio).

- Nevada: There is only one hospital administrator shown for Zones 2, 3, and 4; in each case he is a member of the national society. However, only one of the six administrators in Zone 5 and only one of the four in Zone 1 are members.

- Wyoming: Both responding administrators from Zone 3 are members, and five out of six administrators in Zone 6 are members. Membership figures for other zones are proportionately lower than the regional average.

C. NEED FOR CONTINUING EDUCATION

Hospital administrators, among other health professionals, were asked to indicate their need for continuing education. While most hospital administrators are not directly involved in the treatment of patients, their work is closely related to patient care and their administrative techniques should be up-to-date and efficient. They were asked whether or not they would attend specified short-term training courses, if such were made available to them. The content of each of the specified courses generally related to administrative functions.

Responses to these questions are summarized in Table III-2.

Examination of this table reveals relatively minor variation among the administrators as to the particular types of courses that they would attend. However, the important observation is that two-thirds or more of all hospital administrators in the entire Mountain States Region indicate that they would attend every training course listed, if all were made available to them. Indeed, for three of these courses (Hospital/Nursing Home Administration, Business Management, and Personnel Management) better than nine out of ten indicate that they would attend training courses, and in all but two cases (Purchasing and Computer Programming) better than three out of four would attend. This may be taken as a clear and strong indication of interest in and need for continuing education on the part of hospital administrators in the Mountain States Region.

D. DESIRED METHODS AND PROCEDURES OF CONTINUING EDUCATION

1. Preferred Educational Procedures

In this section, responses of hospital administrators concerning the availability, use, and need for various methods associated with continuing education will be examined both in terms of administrators' evaluation of their own requirements, and their evaluation of the requirements of various members of their staff (physicians, nurses, allied health and administrative personnel, etc.). Ten specific methods of continuing education are involved in this discussion:

- short-term training courses (one to four weeks)
- workshop (one to three days)
- special classes conducted in facility
- educational films
- educational television
- educational radio
- professional journals and books
- programmed instructions
- conventions and meetings (national, state, local)
- case conference

Table III-2. Percent of Hospital Administrators Who Would Attend Specified Courses, by State

COURSE	REGION	IDAHO	MONTANA	NEVADA	WYOMING
Hospital/nursing home administration	93.3%	93.8%	97.7%	92.9%	86.7%
Personnel management	91.1	93.9	94.6	83.3	86.7
Business management	92.5	96.8	94.4	92.3	85.2
Purchasing	73.0	81.5	82.9	63.6	55.6
Budgeting	80.2	86.7	88.9	75.0	64.3
Medical records	75.3	72.0	87.9	76.9	61.5
Computer (programming)	65.1	69.2	69.2	83.3	45.5

The availability of these methods, as indicated by hospital administrators, is shown in Table III-3. This table contains data showing both numerical and proportionate frequencies for the Mountain States Region as a whole and for each state. The relatively small number of responses from each of the states makes it impractical to consider the data in any greater detail than on a state basis. Thus, this discussion will be limited to observations that relate to the states and to the Mountain States Region as a whole.

Hospital administrators could indicate either that a method was available or that it was needed. Table III-3 presents only data relating to methods that are *needed* since this is the field of concern in the present analysis.

Hospital administrators in the Mountain States Region differentiate clearly between methods they feel are most needed, and those they feel are least needed. Nine out of ten hospital administrators in the Mountain States Region feel that for *all* members of their staffs (physicians, allied health professionals, and administrators) the most needed method is educational television. Better than eight out of ten administrators also feel that educational radio is needed. It is indicated elsewhere (Section D) that hospital administrators tend to consider distance rather than dollars to be the greater obstacle to continuing education. Here, again, it would seem that the response to educational television and educational radio is consistent with the predominant concern with distance in the Mountain States Region. Clearly, both radio and television are methods of continuing education that can overcome the distance dilemma in the Mountain States Region.

Hospital administrators indicate a much smaller degree of need for continuing education through professional journals and books, and conventions and meetings. This, of course, does not necessarily mean that journals and books or conventions and meetings are not needed. Because of the way in which the data have been aggregated for this analysis, it may in fact mean that they are not needed because they are already available. Nevertheless, less than two out of ten administrators in the Mountain States Region consider professional journals and books, and conventions and meetings, to be methods of continuing education that are "needed."

About seven out of ten hospital administrators in the Mountain States Region indicate a need for two methods of continuing education. These methods are programmed instruction and special classes conducted in the facility. Conceivably, these two methods can be considered, along with educational television and educational radio, as methods that tend to counteract the problem of distance.

Table III-3. Needed Methods of Continuing Education for Staff Personnel As Reported by Hospital Administrators

METHODS	MEDICAL					ALLIED					ADMINISTRATIVE				
	REGION	IDAHO	MONTANA	NEVADA	WYOMING	REGION	IDAHO	MONTANA	NEVADA	WYOMING	REGION	IDAHO	MONTANA	NEVADA	WYOMING
Short-term training courses	60.0%	50.0%	75.0%	44.4%	53.3%	62.7%	56.5%	75.0%	55.6%	56.5%	58.1%	55.0%	70.4%	37.5%	52.6%
Workshop	61.8	43.8	80.0	40.0	64.7	56.7	39.1	75.9	50.0	54.2	55.3	46.4	69.0	35.7	60.9
Special classes on site	67.7	76.9	81.0	36.4	64.7	46.6	54.2	59.3	14.3	43.5	71.8	70.0	78.3	70.0	66.7
Educational films	27.5	36.8	39.3	9.1	13.6	28.7	34.6	40.0	15.4	16.0	38.8	40.0	42.3	45.5	28.6
Educational television	89.8	100.0	76.5	90.0	100.0	93.9	100.0	86.7	90.0	100.0	95.5	100.0	86.7	100.0	100.0
Educational radio	81.8	100.0	70.0	66.7	87.5	84.8	100.0	77.8	66.7	87.5	90.0	100.0	72.7	100.0	100.0
Professional journals and books	18.0	22.2	25.0	0.0	14.3	17.2	23.1	18.8	0.0	18.5	12.4	14.8	15.2	0.0	12.0
Programmed instruction	71.7	83.3	88.9	37.5	60.0	64.1	66.7	85.7	30.8	60.0	72.1	86.7	87.5	33.3	53.8
Conventions/meetings	11.2	8.7	13.8	0.0	16.0	12.6	12.5	18.5	0.0	13.0	7.7	4.0	15.6	0.0	13.0
Case conference	32.9	41.2	44.4	8.3	23.5	45.6	50.0	47.1	45.5	36.4	45.2	66.7	50.0	12.5	33.3

An additional observation may be made about special classes conducted in the facility: when considering this method, hospital administrators differentiate among the various levels of personnel on their staffs. For example, while seven out of ten administrators would apply this method to physicians (42 of 62, or 67.7%) or members of the administration (51 of 71, or 71.8%), somewhat fewer than half of the administrators indicate a need for special classes for the allied health professionals on their staffs (41 of 88, or 46.6%). The data cannot tell us whether this differentiation is due to the specific intention of hospital administrators, or whether it means that the method is already widely available to members of the allied health professions.

Some observations about states can be made from Table III-3. For example, the indicated need for some methods, as applied to any one of the three categories of staff, varies from 0% to 100%. In Nevada, for example, not a single hospital administrator indicates that any members of his staff need professional journals and books or conventions and meetings as methods of continuing education. This, too, may be taken to indicate that these methods are currently available and no additional need for them exists. On the other hand, each hospital administrator in Idaho indicates that educational radio and educational television are methods needed for all members of the staff. Unfortunately it is not possible to ascertain whether this means that these methods are not available at all in Idaho, or whether it means that, however available they may be, the need is still very extensively felt. This same expression is made, almost to the same degree, by administrators in Wyoming. However, whereas hospital administrators are unanimous with regard to educational television, they fall just short of unanimity with regard to educational radio.

2. Attendance at Courses

a) Outside Local Community: Hospital administrators in the Mountain States Region were asked the following question: "If short-term training in the prevention, treatment, and rehabilitation of heart, cancer, and stroke patients was offered at a center outside of your community, would personnel be permitted to attend if expenses were paid by an outside source?" There were 127 administrators who responded. Almost all (122) indicated that personnel would be permitted to attend if expenses were paid by an outside source. None of the 34 administrators in Idaho would deny their personnel permission to attend. Only 1 of the 45 administrators in Montana, 2 of the 16 in Nevada, and 2 of the 32 administrators in Wyoming would deny personnel the opportunity to attend.

To probe further, administrators who would deny permission of personnel to attend courses under such circumstances were asked to indicate their reasons. Choices offered in the questionnaire and the number of administrators choosing each are shown below:

	Idaho	Montana	Nevada	Wyoming	Region
No one to replace personnel	4	2	3	2	11
Family responsibilities of personnel	3	2	1	1	7
Objections from personnel	2	0	0	1	3
Not interested in such workshops	0	0	1	0	1

b) Within Local Community. Hospital administrators were asked the following question, "If training in the prevention, treatment, and rehabilitation of heart, cancer, and stroke patients was offered in your community, would personnel be able to attend?" The available data indicate unanimous consent. That is, every one of the 128 hospital administrators in the Mountain States Region (34 from Idaho, 45 from Montana, 16 from Nevada, and 33 from Wyoming) indicates an affirmative reply.

E. OTHER FACTORS RELEVANT TO CONTINUING EDUCATION

1. Techniques for Encouraging Participation

Mountain States hospital administrators were asked to indicate which of several techniques would enable their employees, as well as themselves, to participate more fully in continuing education. The techniques included the following:

- payment of expenses
- released time (no loss of salary)
- relief personnel to substitute
- programs closer to home
- more complete information about existing programs

One hundred and thirty-one responses were recorded by hospital administrators. According to Table III-4, distance is a greater barrier than expense in thwarting participation in continuing education. The payment of expenses and programs closer to home are the most prominent techniques that would enable greater participation in continuing education. For example, 110 indications (84.0%) from 131 hospital administrators show that programs closer to home would enable administrators as well as their employees to participate more fully in continuing education. It would appear that distance is the biggest problem in the State of Nevada. For example, there were 15 indications (out of a total of 16 responding hospital administrators, or 93.8%) that programs closer to home would be a help. Even in Wyoming, where the lowest proportion (79.4%) of the administrators indicated that this technique would be helpful, almost eight out of ten (27 of 34) of the hospital administrators indicate that this technique would be helpful.

Obviously, expense is also a principal problem. On a regional basis there were 83 indications (63.4% of 131 administrators) that payment of expenses would enable administrators and their employees to participate more fully in continuing education. This six-to-ten ratio is common for all states in the Region.

According to the administrators, the least effective technique that would enable greater participation in continuing education is released time (even with no loss of salary). There were only 36 indications on a regional basis that this technique would be useful; thus, only about one in four hospital administrators would consider relief personnel to be a useful technique, as well as more complete information about existing programs. While there is some differentiation made by administrators in each of the states according to specific techniques for facilitating participation in continuing education, the relatively small frequencies involved should be taken to be illustrative rather than definitive of any differentiations among the states for any one type of facilitating technique.

2. Classroom Space, Equipment, and Teaching Personnel

Hospital administrators were asked to indicate whether or not there is adequate classroom space and equipment available in their facilities to handle the continuing education of their personnel. Virtually all (129) administrators gave responses to the question on classroom space; however, a lesser number (112) gave responses in relation to equipment. In the first instance 62.8% (81 of 129) administrators indicate that there _is_ adequate classroom space in their facilities for the continuing education of personnel. In contrast, however, less than half the administrators, 48.2% (54 of 112 administrators) indicate that there is adequate equipment available in their facilities for the continuing education of personnel. Thus, hospital administrators indicate, at

Table III-4. Techniques That Would Encourage Greater Participation of Staff Personnel in Continuing Education As Reported by Hospital Aministrators

TECHNIQUES	REGION	IDAHO	MONTANA	NEVADA	WYOMING
Payment of expenses	63.4%	62.9%	63.0%	68.8%	61.8%
Released time (no loss of salary)	27.5	37.1	26.1	18.8	23.5
Relief personnel to substitute	53.4	68.6	39.1	68.8	50.0
Programs closer to home	84.0	85.7	82.6	93.8	79.4
More complete information about existing programs	42.7	48.6	43.5	31.3	41.2

Table III-5. Classroom Space and Equipment Available for Continuing Education as Reported by Hospital Administrators

	REGION	IDAHO	MONTANA	NEVADA	WYOMING
Classroom space	62.8%	62.9%	66.7%	50.0%	63.6%
Equipment	48.2	48.3	37.8	56.3	56.7

least by inference, that there is unequipped or insufficiently equipped space available in their facilities which could be used for the continuing education of personnel. Another inference from the same data may be that the equipment available is comparatively less adequate than the space available for use in support of continuing education of personnel.

There is not much difference in response to these questions by administrators from one state to another in the Mountain States Region. For example, with regard to classroom space, the highest proportion of administrators indicating that space is available are from Montana (66.7%) while the lowest proportion is from Nevada (50.0%). These proportionate differences do not appear to be significant on a purely statistical basis.

On the other hand, some differences can be noted in the responses by administrators with regard to equipment available for use in the continuing education of personnel. The lowest proportion (37.8%) of administrators indicating that the equipment available is adequate are those from Montana, whereas the highest proportion (56.7%) of administrators indicating that the equipment available is adequate are those from Wyoming. Here again, these differences do not appear to be significant on a purely statistical basis.

Administrators in the State of Montana on the one hand indicate the highest proportion (66.7%) of classroom space available but on the other hand the lowest proportion (37.8%) of equipment available for use in the continuing education of personnel. A relatively high proportion of the administrators in Wyoming indicate both that adequate classroom space is available for use in their facility for continuing education of personnel and also that there is adequate equipment available for the same purpose. A summary of data that support the observations made in this section has been tabulated in Table III-5.

The survey questionnaire investigated the extent to which persons are employed in Mountain States hospitals for the specific purpose of providing continuing education for staff and allied professionals. Responses to this question fall into four categories, as shown on the following page.

	Full-time Employee to Conduct Continuing Education				Part Time Employee to Conduct Continuing Education			
		Yes	No	Total		Yes	No	Total
For Medical Staff	Idaho	0	27	27	Idaho	10	18	28
	Montana	0	37	37	Montana	3	31	34
	Nevada	0	16	16	Nevada	6	10	16
	Wyoming	1	31	32	Wyoming	5	23	28
	Region	1	111	112	Region	24	82	106
		Yes	No	Total		Yes	No	Total
In Allied Professionals	Idaho	3	23	26	Idaho	10	16	26
	Montana	3	31	34	Montana	13	24	37
	Nevada	2	12	14	Nevada	5	8	13
	Wyoming	1	28	29	Wyoming	7	19	26
	Region	9	94	103	Region	35	67	102

These data suggest that a relatively small number of personnel are employed to conduct continuing education either for hospital medical staffs or for allied professionals. However, about one-third of the respondents (34.3%, 35 of 102) indicate that there are persons employed part time to conduct continuing education for members of the allied health professions.

F. HEALTH PROBLEM SUPPORT TO CONSUMER AND COMMUNITY

1. Consumer Health Problems

Hospital administrators, like most other health professionals, were asked to assess, in their communities, the quality of the teaching and support provided to patients and their families with regard to a number of health problems. Specifically, these problems are:

- Colostomy
- Ileostomy
- Speech defects
- Paralysis
- Bowel and bladder incontinence
- Special dietary needs
- Amputations
- Tracheostomy
- Limited physical activity

The assessment values were: excellent, good, fair, and poor. For ease of reference and evaluation, and because of the relatively small numbers involved, the evaluations "good" and "excellent" have been combined and reported as a percentage both for the Region as a whole and for each state. This is shown in Table III-6. Examination of the table shows the actual number of hospital administrators not only in each state, but also in each zone of the states who gave the combined evaluation "good or excellent." In Table III-7, some of these numbers are italicized. If a number is italicized it means that that number, in relation to the total number of administrators in the particular zone of reference, represents a higher proportion of administrators who indicate the evaluation "good or excellent" than the state average. Thus, Table III-7 represents a synthesis and a summary of hospital administrator assessment of teaching and support to patients and their families in their communities for each of the indicated problems.

On a regional basis a higher proportion of hospital administrators (63.0%) indicates that teaching and support provided to patients and their families whose health problem involves special dietary needs is rated good or excellent. Not quite the same proportion of administratotrs, though well over half on the regional basis, indicate good or excellent teaching and support provided to patients and their families whose problems include colostomy (59.6% of the administrators), ileostomy (53.7%), and amputations (52.5%). Less than 50% but more than 40% of the administrators indicate a good or excellent rating for teaching and support to patients whose problems include tracheostomy, limited physical activity, and bowel and bladder incontinence. Only one out of three (33.4%) of the hospital administrators indicate that teaching and support to patients and their families whose problem is paralysis is good or excellent, and only slightly more than two out of ten (23.7%) indicate good or excellent support to patients and families whose problem is speech defects.

As can be seen with reference to Table III-7, there are some differences in assessment of teaching and support according to hospital administrator evaluation between one state and another. In Nevada the highest proportion of administrators who indicate that teaching and support is either good or excellent is given to six of the nine health problems. The other three (amputations, limited physical activity, and bowel and bladder incontinence) are given the highest rating by administrators in Wyoming.

Numbers are so small that percentages could be misleading if they are computed for areas smaller than the state (that is, by zone). However, by observing the pattern of italicized figures the reader can see that not a single zone consistently excels any of the other zones in the state with regard to state average for all health problem areas. Nevertheless, some zones do excel with regard to many of the health problems. A few consistently do not excel for any of the health problems. Despite this observation, interpretation should be guarded. The reason is simply that the numbers are so small that any truly meaningful trend cannot be ascertained.

Table III-6. Quality of Teaching and Support Services As Reported by Hospital Administrators

RANK (Good and Excel.)	HEALTH PROBLEMS	REGION		IDAHO		MONTANA		NEVADA		WYOMING	
		Good and Excel.	Fair and Poor	Good and Excel.	Fair and Poor	Good and Excel.	Fair and Poor	Good and Excel.	Fair and Poor	Good and Excel.	Fair and Poor
2	Colostomy	59.6%	40.4%	57.1%	42.9%	59.5%	40.5%	71.4%	28.6%	55.0%	45.0%
3	Ileostomy	53.7	46.3	50.0	50.0	51.3	48.7	69.2	30.8	52.9	47.1
1	Special dietary needs	63.0	37.0	56.7	43.3	60.5	39.5	85.7	14.3	61.9	38.1
4	Amputations	52.5	47.5	51.9	48.1	42.5	57.5	64.3	35.7	65.0	35.0
9	Speech defects	23.7	76.3	24.1	75.9	21.1	78.9	36.4	63.6	21.1	78.9
8	Paralysis	33.4	66.6	28.6	71.4	26.8	73.2	46.2	53.8	45.0	55.0
7	Bowel/bladder incontinence	42.9	57.1	37.9	62.1	40.5	59.5	38.5	61.5	57.1	42.9
5	Tracheostomy	47.9	52.1	42.9	57.1	39.5	60.5	76.9	23.1	52.6	47.3
6	Limited physical activity	45.2	54.8	45.2	54.8	35.0	65.0	53.8	46.2	60.0	40.0

Table III-7. Quality of Teaching and Support Services, According to Study Zone, As Reported by Hospital Administrators

HEALTH PROBLEMS[1]		IDAHO								MONTANA						NEVADA							WYOMING						
			Zone								Zone						Zone							Zone					
	Region Average	State Average	1	2	3	4	5	6	7	State Average	1	2	3	4	5	State Average	1	2	3	4	5	6	State Average	1	2	3	4	5	6
Special dietary needs	63.0%	56.7%	*2*	2	*6*	1	*4*	1	*1*	60.5%	*5*	3	4	*9*	5	85.7%	4	*1*	*2*	*1*	0	4	61.9%	*2*	*4*	0	*1*	*3*	3
Colostomy	59.6	57.1	*2*	2	*6*	0	*5*	0	*1*	59.5	4	4	2	*8*	*7*	71.4	2	*1*	*2*	*1*	0	*4*	55.0	*3*	2	*1*	0	2	*3*
Ileostomy	53.7	50.0	*2*	2	*5*	0	*4*	0	0	51.3	*4*	*4*	2	5	*5*	69.2	2	*1*	*2*	*1*	0	*3*	52.9	2	2	*1*	0	2	2
Amputations	52.5	51.9	*2*	1	*5*	1	*4*	0	*1*	42.5	*4*	*4*	3	3	3	64.3	2	*1*	*2*	*1*	0	3	65.0	*4*	*3*	*1*	0	2	3
Tracheostomy	47.9	42.9	*1*	1	*5*	0	*4*	0	*1*	39.5	*3*	*3*	2	*4*	*3*	76.9	3	*1*	*2*	*1*	0	3	52.6	2	2	*1*	0	*3*	2
Limited physical activity	45.2	45.2	*1*	2	5	*2*	3	1	0	35.0	*4*	2	1	*5*	2	53.8	0	*1*	*2*	*1*	0	*3*	60.0	*3*	*4*	*1*	*1*	2	1
Bowel/bladder incontinence	42.9	37.9	*1*	1	*6*	1	2	0	0	40.5	*4*	*4*	1	4	*4*	38.5	1	*1*	0	0	0	*3*	57.1	*4*	2	*1*	0	*3*	2
Paralysis	33.4	28.6	0	0	*4*	*1*	*3*	0	0	26.8	*3*	*2*	2	*3*	1	46.2	0	*1*	*1*	*1*	0	*3*	45.0	2	2	*1*	0	2	2
Speech defects	23.7	24.1	*1*	1	1	*1*	*3*	0	0	21.1	*3*	*2*	1	1	1	36.4	0	0	*1*	0	0	*3*	21.1	1	*2*	0	0	*1*	0

[1] The health problems are listed in rank order.

NOTE: Italics indicate a proportion of responses higher than the state average.

2. Community Procedures

In addition to the concern for health problems about which hospital administrators were asked to give their opinion, there was also some interest in obtaining an assessment of procedures with regard to the exchange of information within a community. Thus, hospital administrators were asked to indicate whether several procedures were either satisfactory or unsatisfactory in their community. These procedures were:

a) dissemination of information to the public concerning the prevention, diagnosis, treatment, and rehabilitation of heart disease, cancer, and stroke,

b) exchange of patient information among health agencies, welfare agencies, and so on, and

c) exchange of patient information among departments within the hospital administrator's own facility.

For the entire Mountain States Region, 106 hospital administrators responded to the first question, 111 responded to the second, and 118 responded to the third. Thus, a little over 100 administrators in the Mountain States region responded to these three questions. However, there appear to be some very important differentiations by these administrators with regard to each of the three questions. For any one of the questions, however, there seems to be little differentiation made by hospital administrators from each of the states. (See Table III-8.)

With regard to the first question, dissemination of information to the public, a little less than half, 45.3% (48 of 106) of the hospital administrators in the Mountain States Region indicate that the procedures are satisfactory. Perhaps the alternative view should be used in order to make the point more visible. That is, more than half of the administrators in the Mountain States region consider that the procedures in their community are unsatisfactory with regard to the dissemination of information to the public concerning the prevention, diagnosis, treatment, and rehabilitation of heart disease, cancer, and stroke. This is true for each of the states with the exception of Wyoming. In Wyoming, 12 of 23 responding hospital administrators indicate that the dissemination of information is satisfactory; thus, if one of those 12 had indicated that the procedures were unsatisfactory rather than satisfactory, then not only for the Region as a whole, but for every state within the Region, it would be unanimous that the procedures for disseminating information to the public in the Mountain States region were unsatisfactory.

Table III-8. Satisfaction with Procedures As Reported by Hospital Administrators

PROCEDURES	REGION	IDAHO	MONTANA	NEVADA	WYOMING
Dissemination of information to the public	45.3%	41.4%	45.0%	42.9%	52.2%
Exchange of patient information between health agencies	63.1	61.3	62.5	60.0	68.0
Exchange of patient information between departments	94.1	93.9	92.9	100.0	92.6

The exchange of patient information either between agencies or between departments within the hospital administrator's own facility, was considered to be satisfactory by a clear majority of the hospital administrators. In the case of the exchange of patient information between agencies, welfare agencies, and so on, 63.1% (70 of 111) administrators indicated that the procedures were satisfactory. This six out of ten ratio is fairly constant for all states within the Mountain States Region. For example, 61.3% (19 of 31) of the administrators in Idaho, 62.5% (25 of 40) of the administrators in Montana, 60.0% (9 of the 15) of the administrators in Nevada, and 68.0% (17 of the 25) of the administrators in Wyoming indicate that the procedures are satisfactory with regard to the exchange of patient information between health agencies, welfare agencies, and so on.

A much higher proportion of administrators in each of the states and in the Mountain States Region as a whole indicate that the procedures are satisfactory with regard to the exchange of patient information between departments in their own facility. In every state, and for the Region as a whole, better than nine out of ten hospital administrators consider the exchange of patient information between departments to be satisfactory. In the Region 94.1% (111 of 118) consider these procedures to be satisfactory. Specifically, in Idaho, 93.9% (31 of 33), in Montana, 92.9% (39 of 42), in Nevada all 16 administrators, in Wyoming 92.6% (25 of 27) of the administrators all agree that the procedures are satisfactory, with regard to the exchange of patient information between the departments in their own facilities.

Hospital administrators consider the exchange of patient information between the departments in their own facilities to be satisfactory by a margin better than two to one, compared to the general dissemination of information to the public concerning the prevention, diagnosis, treatment, and rehabilitation of heart disease, cancer, and stroke.

IV. REGISTERED NURSE

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A. INTRODUCTION

1. Sample Size and Distribution

About one-half of the 1,405 registered nurses (RN) contacted in the Mountain States responded to the MS/RMP questionnaire. About 200 of them indicated that they were not in active practice at the time of the survey and were eliminated from the sample for the purposes of this analysis. The overall response rate was highest in Wyoming (63.5%) and lowest in Nevada (32.0%). Table IV-1 shows the response numbers and rates for the Region and each of the states. It also shows how the actual sample was derived by eliminating all inactive nurses, and how the resulting 491 RNs are distributed among the states. The analysis and findings described in this report are based on this sample and distribution.

Table IV-1. Registered Nurses Sample Size for Region and States

STATE	TOTAL CONTACTED (1)		TOTAL RESPONSES		ACTUAL SAMPLE SIZE (3)	
	No. of Contacts	Region Proportion (%)	No. of Responses (2)	Response Rate (%)	Number	Regional Proportion (%)
Idaho	403	28.7	194	48.1	124	25.3
Montana	500	35.6	276	55.2	192	39.1
Nevada	291	20.7	93	32.0	64	13.0
Wyoming	211	15.0	134	63.5	111	22.6
Region	1,405	100.0	697	49.6	491	100.0

(1) A 10% sample of nurses was contacted in each state; Idaho and Montana contacted an additional 5%.

(2) All responses to survey are included in this total.

(3) Only respondents in active practice at time of survey are included in this total.

2. Highlights of the Analysis

- Nearly one half of the Mountain States nurses do not belong to a national professional nursing organization.

- The great majority of RNs (80% or more) express the need for continuing education in all heart disease, stroke, and cancer clinical areas.

- Nurses with between 10 and 20 years of active practice are the ones who most frequently express need for education in almost all areas.

- Current methods of continuing education most frequently used by Mountain States nurses are professional journals and books and attendance at conventions or meetings of professional societies.

- Methods of education not available to, but desired by, more than four out of ten RNs include

    short-term training courses

    educational television

    educational radio

    workshops

- More nurses show a need for education in prevention, treatment, and rehabilitation of patients for all three disease categories than for any single area or lesser combination.

- A majority of the RNs would not attend short-term courses outside the local community, even if all expenses were paid, largely because of family responsibilities.

- Most nurses feel that holding training programs closer to home would be the biggest single stimulus to increased participation of RNs in continuing education, and nine out of ten would attend short-term courses held in their own communities.

- Less than half of the Mountain States nurses feel that the teaching and support provided patients and their families in selected health problems are "good" or "excellent," with lowest overall ranking given by Idaho RNs and highest by Nevada RNs.

- A bare majority of nurses consider the dissemination of health information to the public and procedures for inter-agency exchange of patient information to be "satisfactory" (only 39% in Idaho), although a substantial majority feel that intra-facility exchange of information is satisfactory.

B. SELECTED PERSONNEL AND PROFESSIONAL CHARACTERISTICS

In this section, a partial profile of the Mountain States RN is drawn. The characteristics selected in developing this profile are those considered of particular relevance to those major problem areas examined analytically in subsequent sections.

1. Age

The average age of those RNs who reported their age (491) is just over 42 years. Approximately 61% of the RNs within the Region report being over 40 years of age. The distribution of age is consistent among states and zones. Nevada has the lowest rate of response (13%) but does not vary significantly from the other states in age level reported. In addition to the Nevada zones, two others have low totals responding:

- Idaho: Zone 7 has four respondents, one in the 25 to 29.9 year age range, the others in the 40 to 44.9 year age range.
- Wyoming: Zone 3 has six respondents. Two are in the 30 to 34.9 year age range, one in the 35 to 39.9 range, two in the 40 to 44.9 range, and one in the 50 to 54.9 range.
- Only 6% of the responding RNs in the Region are over 60 years of age.

2. Years of Active Practice

In considering the Region as a whole, the data indicate that slightly over 50% of the respondents have had fewer than 15 years of practice. Four out of ten RNs (39.9%) have had between 5 and 15 years of experience. It is interesting to note that although 10.5% of the RNs report that they have had fewer than five years of experience, ten zones report no RNs with fewer than five years of experience.

- Nevada reports no RNs with fewer than 5 years of practice. Zones 2, 3, 4, and 5 report no RNs with fewer than 10 years of experience. (It should be noted that only 61 RNs reported from Nevada, and there were no responses from Nevada Zone 2).
- Only Zone 4, in Wyoming, reports a similar condition.

3. Basic Nursing Education

On a regional basis there were 486 responses to this question. Each of the four states reports that at least 85.4% of the respondents hold diplomas. No respondents indicate they had completed work for a Master's degree. Six zones (Idaho, Zones 1 and 7; Nevada, Zones 3, 4, and 5; and Wyoming, Zone 4) indicate that they have no responding nurses with a Baccalaureate degree.

Similarly, nine zones (Idaho, Zones 1, 2, and 7; Nevada, Zones 3, 4, and 5; and Wyoming, Zones 2, 3, and 4) indicate no nurses with an Associate of Arts Degree.

4. Nursing Organization Affiliation

Of the responding 482 nurses, 265 (54.9%) indicate that they belong to neither the American Nursing Association nor the National League of Nurses, 211 (43.8%) indicate membership in A.N.A., but only six (1.3%) report affiliation with N.L.N. These nurses are from Montana (Zone 2), Nevada (Zone 1), and Wyoming (Zone 6).

The states are reasonably consistent in reports of membership in A.N.A. Idaho reports that 52 of the responding nurses (39.6%) are A.N.A. members. Montana reports 85 members (44.9%), Nevada reports 35 members (55.5%), and Wyoming reports 39 members (35.7%).

Zone responses vary considerably. Idaho, Zone 7, is the only group reporting no A.N.A. membership among respondents; however, only four nurses returned questionnaires from this zone. None of the Idaho, Zone 7, nurses reports N.L.N. membership. Montana, Zone 2, reports the highest number of A.N.A. members (25).

5. Nature of Clinical Practice

In order to obtain some indication of the relationship between expressed interest and concern for continuing education and actual practical experience, nurses were asked to indicate whether or not they encountered patients with specified heart disease, cancer, and stroke conditions in the course of their daily clinical practice.

Table IV-2. Clinical Conditions Observed in Registered Nurses' Practice

REGION RANK	CLINICAL CONDITION	REGION	IDAHO	MONTANA	NEVADA	WYOMING
--	Do not work in clinical areas	25.9%	26.6%	25.5%	25.0%	26.1%
1	Congestive heart failure	89.9	88.6	87.8	86.1	97.0
6	Cardiac arrhythmias	86.4	88.5	81.5	81.8	93.8
2	Hypertensive cardiovascular disease	89.9	87.9	89.0	86.5	95.4
8	Myocardial infarction	84.6	83.9	82.1	81.8	90.6
12	Rheumatic heart disease	80.0	79.3	79.8	72.7	85.0
13	Rheumatic fever	74.0	69.1	77.4	55.6	82.5
16	Congenital heart defect	70.8	72.2	72.8	57.1	73.6
3	Cerebral vascular accident	88.9	88.2	87.2	86.1	93.9
9	Peripheral vascular disease	84.3	86.0	80.7	80.6	89.8
17	Stroke rehabilitation	70.6	64.0	75.0	51.7	78.9
4	Cancer of gastro-intestinal tract	88.5	90.8	86.8	82.4	92.2
5	Cancer of genito-urinary tract	87.3	89.1	87.3	79.4	90.0
14	Cancer of skin	73.5	79.6	70.5	67.7	75.0
10	Cancer of respiratory tract	82.3	85.5	81.6	75.0	83.9
18	Cancer of central nervous system	68.0	75.0	70.3	53.8	65.2
15	Cancer of oral cavity, head and neck	72.7	76.0	74.4	66.7	70.0
7	Cancer of breast	84.8	85.1	85.4	78.1	87.1
11	Lymphoma and leukemia	81.3	83.3	82.2	75.0	81.5

One out of four RNs (25.9%) do not work in clinical areas. Of those who do, a substantial majority (at least two-thirds in all cases) indicate they encounter patients in each of the clinical areas listed. The clinical areas and the RN responses for the Region and each state are included in Table IV-2. Examination of this table shows that all three disease categories (heart disease, cancer, stroke) are represented among the five clinical areas most frequently mentioned by nurses as comprising a part of their clinical practice.

- congestive heart failure
- hypertensive cardiovascular disease
- cerebral vascular accident
- cancer of the gastro-intestinal tract
- cancer of the genito-urinary tract

C. NEED FOR CONTINUING EDUCATION

1. Expressed Need

One method of establishing continuing education needs of nurses was to request the respondents to indicate their need for help in keeping abreast of changes in nursing care of patients with various clinical conditions. Table IV-3 indicates the percent of nurses by each reporting state who indicate either high or moderate need for such assistance.

It is apparent from this table that, on a regional basis, the majority of RNs feel a need for additional education in all disease areas. This is indicated by the fact that the lowest rated area (cancer of breast) is still considered as an area of educational need by 80% of the 348 respondents.

When these data are viewed at the state level it is still apparent that the vast majority of nurses express continuing education needs in all disease areas. The lowest rating is a 78.2% choice of need by Idaho RNs in the area of cancer of the breast. Table IV-3 also indicates the rank order of educational need by Region. For example, on a Region basis 92.6% of the respondents indicate continuing need for education in the area of cardiac arryhthmias. This is the highest percent response on a Region basis and has a rank order of one. While there is some rank order shifting in each of the states, the general rank order pattern in the states is quite similar to the regional pattern.

Table IV-3. Need for Continuing Education in Clinical Conditions As Reported by Registered Nurses

REGION RANK	CLINICAL CONDITION	REGION	IDAHO	MONTANA	NEVADA	WYOMING
6	Congestive heart failure	89.9%	90.2%	92.6%	84.4%	88.0%
1	Cardiac arrhythmias	92.6	91.8	92.3	93.1	93.6
3	Hypertensive cardiovascular disease	90.7	90.8	90.3	86.9	91.0
2	Myocardial infarction	90.8	93.2	90.3	88.6	90.1
12	Rheumatic heart disease	86.9	88.3	87.5	86.3	84.2
15	Rheumatic fever	83.9	84.5	82.8	90.9	81.1
8	Congenital heart defect	89.3	88.4	90.5	88.9	88.2
13	Cerebral vascular accident	86.3	89.8	84.9	80.0	88.5
7	Peripheral vascular disease	89.6	90.3	89.1	88.1	90.6
10	Stroke rehabilitation	88.2	95.3	85.3	78.6	91.4
14	Cancer of gastro-intestinal tract	84.3	85.9	81.8	83.7	87.3
16	Cancer of genito-urinary tract	83.7	84.5	83.0	80.9	85.5
17	Cancer of skin	82.3	84.0	79.7	81.4	86.1
9	Cancer of respiratory tract	88.5	90.6	86.6	85.7	91.0
4	Cancer of central nervous system	90.4	92.9	87.9	88.1	93.3
11	Cancer of oral cavity, head and neck	87.8	87.8	88.4	83.3	89.2
18	Cancer of breast	80.0	78.2	78.5	78.5	85.5
5	Lymphoma and leukemia	90.1	89.4	90.9	90.3	89.3

2. Factors Affecting Need for Education

Table IV-4 indicates the percent of RNs in the region who assert a need for additional education in these same areas of clinical conditions, in terms of their clinical experience (as measured by years of active practice).

This comparison is made to determine whether there are significant differences in felt need for training that can be related to the number of years spent in the nursing field. It is apparent that, while some variation does occur between the group with 0-9 years of experience and the other two groups (10-19 years and over 20 years of active practice), there is unusual consistency among all groups.

D. DESIRED METHODS AND PROCEDURES OF CONTINUING EDUCATION

1. Preferred Educational Procedures

A number of continuing education programs are already available in the Region. The RNs were asked about the types of programs they knew to be available, which programs are used, and what programs are needed. Emphasis was placed on training programs dealing with heart disease, cancer, and stroke.

The data in Table IV-5 show that when continuing education methods are available they are used by the nurses. With two exceptions (work shops and educational films), at least 90% of the responding nurses indicate that the programs are used when they are available. Only 58 nurses (32.5%) report that they do not use available work shops, while 67 nurses (24.7%) report non-use of available educational films.

No state or zone variations are significantly different from this trend.

The data in Table IV-5 further show responses with respect to educational methods that are needed but not available. The relative proportion of the two types of responses ("available and used" and "not available but needed") for each method is portrayed graphically in Figure IV-1. These same data have also been combined to derive a single percentage for both responses, which can serve as an index of relative support for each training method by Mountain States nurses. The results of this combination are shown in Table IV-6. These figures should be examined together with the graphs in Figure IV-1 in order to determine the relative weight given the index by each type of response.

Table IV-4. Need for Continuing Education in Clinical Conditions According to Experience of Reporting Registered Nurses.

CLINICAL CONDITIONS	YEARS OF PRACTICE		
	(0 - 4)	(4 - 19)	(20 - over)
Congestive heart failure	89.6%	90.2%	89.1%
Cardiac arrhythmias	94.8	94.4	89.5
Hypertensive cardiovascular disease	90.5	93.5	85.4
Myocardial infarction	92.0	92.2	86.6
Rheumatic heart disease	86.0	93.5	79.1
Rheumatic fever	82.3	90.0	78.3
Congenital heart defect	88.7	92.7	87.0
Cerebral vascular accident	87.7	89.8	80.4
Peripheral vascular disease	91.2	93.4	82.6
Stroke rehabilitation	87.2	91.2	85.4
Cancer of gastro-intestinal tract	87.1	86.1	77.5
Cancer of genito-urinary tract	87.0	85.0	76.5
Cancer of skin	82.5	85.5	77.1
Cancer of respiratory tract	88.6	90.2	86.2
Cancer of central nervous system	94.7	89.1	86.9
Cancer of oral cavity, head and neck	89.4	89.8	82.7
Cancer of breast	79.3	83.9	74.2
Lymphoma and leukemia	92.9	91.6	83.5

Table IV-5. Availability and Need for Methods of Continuing Education As Reported by Registered Nurses

METHODS	REGION		IDAHO		MONTANA		NEVADA		WYOMING	
	% Avail. and Used	% Not Avail. but Needed	% Avail. and Used	% Not Avail. but Needed	% Avail. and Used	% Not Avail. but Needed	% Avail. and Used	% Not Avail. but Needed	% Avail. and Used	% Not Avail. but Needed
Short-term training courses	13.2	56.3	11.2	55.1	16.7	51.4	10.0	72.5	10.7	58.7
Workshops	32.3	39.8	40.0	26.3	32.7	36.6	24.4	62.2	26.6	49.4
Special classes on site	43.3	36.8	43.2	36.4	41.2	34.5	39.5	44.2	49.4	37.7
Educational films	54.5	20.3	52.1	22.3	56.2	17.0	47.7	25.0	57.8	21.7
Educational television	9.6	46.9	5.1	43.6	15.0	42.1	10.8	62.2	3.9	51.3
Educational radio	4.4	40.6	3.9	35.5	4.1	38.0	8.8	55.9	3.0	43.3
Professional journals and books	92.1	6.6	94.6	4.3	91.9	7.5	93.8	6.3	88.8	7.5
Programmed instruction	31.3	39.0	23.1	42.3	38.3	31.3	30.8	46.2	27.9	45.6
Conventions/ meetings	85.2	6.7	89.3	3.6	85.1	6.4	86.4	6.8	80.0	10.7
WCHEN courses	36.5	36.9	30.2	41.3	41.4	30.3	34.6	46.2	35.7	39.3

Table IV-6. Extent of Support for Methods of Continuing Education As Reported by Registered Nurses

METHODS	REGION	IDAHO	MONTANA	NEVADA	WYOMING
	Combined % Avail. & Used, Not Avail. but Needed	Combined % Avail. & Used, Not Avail. but Needed	Combined % Avail. & Used, Not Avail. but Needed	Combined % Avail. & Used, Not Avail. but Needed	Combined % Avail. & Used, Not Avail. but Needed
Short-term training courses	69.5	66.3	68.1	82.5	69.4
Workshops	72.1	66.3	69.3	86.6	76.0
Special classes on site	80.1	79.6	45.7	84.7	87.1
Educational films	74.8	74.4	73.2	72.7	79.5
Educational television	56.5	48.7	57.1	73.0	54.2
Educational radio	45.0	39.4	42.1	64.7	46.3
Professional journals and books	98.7	98.9	98.4	100.0	96.3
Programmed instruction	70.3	65.4	69.6	77.0	73.5
Conventions/meetings	91.9	92.9	91.5	93.2	90.7
WCHEN courses	73.4	71.5	71.7	80.8	75.0

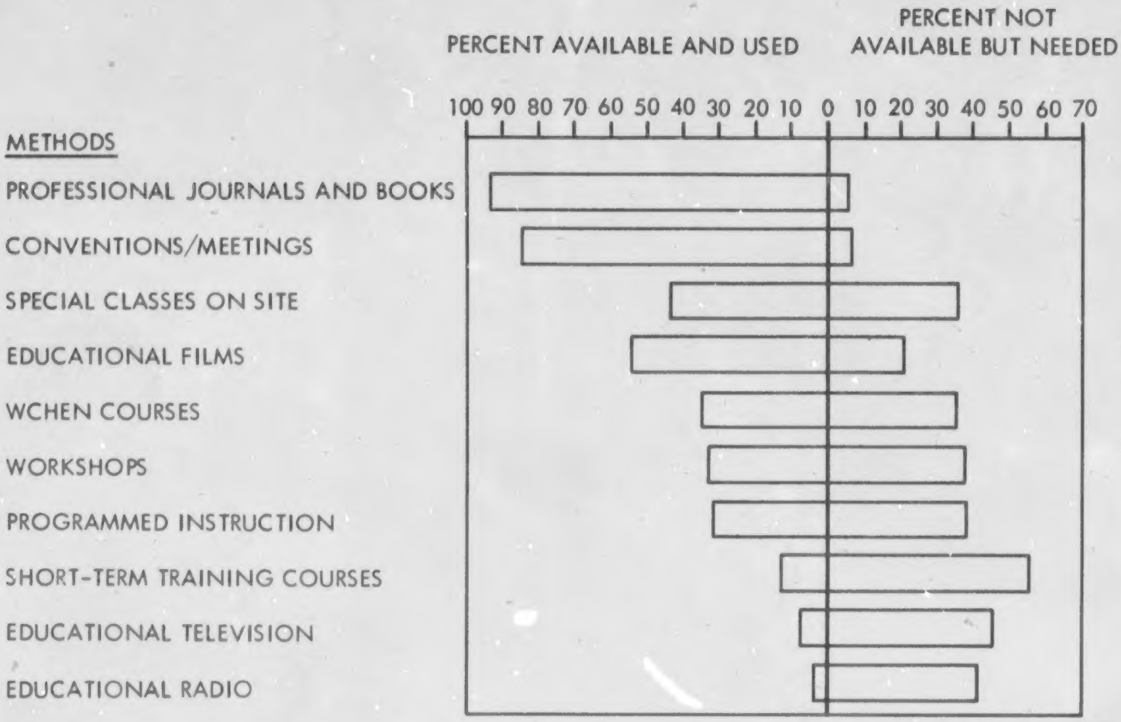

Figure IV-1. Ranking of Registered Nurses' Support for Methods of Continuing Education

For example in Table IV-6 the highest combined support is indicated for professional journals and books. However, Figure IV-1 shows that almost all of this support comes from the "available and used" response. On the other hand, while educational television ranks eighth in indicated support, most of its support is to be found in the "not available but needed" area, where it ranks first. Distinctions such as these may be of considerable importance in determining where the need for new or expanded training programs actually is to be found.

These same data have also been looked at in an effort to ascertain whether any variation owing to years spent in nursing is reflected in the responses. Examination of these data (Table IV-7) shows that there are some observable and consistent differences in educational method preferences among nurses with varying degrees of experience.

- Except for courses involving educational radio and conventions/meetings, the responding nurses with 20 or more years of experience are less likely to suggest that the media are required than are nurses with 0 to 9 years of experience. This trend is consistent throughout the Region for these two groupings of nurses.

- Nurses with 10 to 19 years experience show a trend similar to that observed in the older experience group in relation to nurses with 0 to 9 years experience, except that they are more positive in their reaction to need for educational television.

- For all experience groups, the continuing education facilities most available are professional journals and books and conventions/meetings. Similarly, for all groups the form of continuing education least available is the short-term training course.

- The two media of instruction showing the greatest discrepancy in terms of expressed need between the 0 to 9 year experience and the 20 and over groups are programmed instruction and WCHEN courses. In both areas the group with less experience shows nearly twice the ratio of need of the older group.

2. Attendance at Courses

a.) Outside Local Community. The question posed in this section was, "If short-term training in the prevention, treatment and rehabilitation of heart, cancer and stroke patients was offered to you at a center outside your community would you attend at your own expense?" A majority of responding Region nurses (75.8%) indicate that they would not attend at their own expense.

Table IV-7. Needed Methods of Continuing Education According to Experience of Reporting Registered Nurses

METHODS	YEARS OF PRACTICE		
	(0 - 9)	(10 - 19)	(20 - over)
Short-term training courses	60.7%	56.8%	47/3%
Workshops	44.5	43.1	31.1
Special classes on site	43.2	35.0	30.1
Educational films	23.5	19.4	16.5
Educational television	45.8	51.3	44.4
Educational radio	36.9	45.2	41.6
Professional journals and books	7.6	6.8	5.3
Programmed instruction	50.5	38.0	24.1
Conventions/meetings	4.6	6.0	9.5
WCHEN courses	50.6	32.6	25.4

The states are extremely consistent in this response: no more than 25% of the nuses reporting from each state indicate a willingness to pay for training sessions outside their community. Zone responses are also fairly consistent. Only Zone 6 in Idaho and Zone 4 in Nevada report no nurses willing to pay expenses (Zone 4 in Nevada had only one respondee). Only 227 nurses (55.7%) indicate that they would attend training sessions outside their communities even though expenses were paid for them. Again there is consistency of response among states, although Idaho has a slightly higher ratio of nurses (64.3%) who are willing to attend training courses with expenses paid. The majority of the zones responded with a close approximation of the regional 55% "yes" and 45% "no" answers to this question.

In order to discover probable reasons for not attending training sessions which would be presented at no cost to the individual, such respondents were asked to check one or more of the following categories, listed together with percent of responses received by each:

- no one to replace me at work: 27%
- family responsibility: 65%
- no interest in such work shops: 8%
- other: (no data)

It is of interest that 29 (42.5%) of the nurses selecting the "no replacement" reason for nonattendance are from Montana. The other states are similar in the numbers choosing this category. No zone trends are apparent because of the small number of cases.

Montana also differs somewhat from the other states in the selection of "family responsibility" as a reason for nonattendance. Eighty nurses (48.7%) of those choosing this category are from Montana.

Idaho and Montana account for 80% of the nurses who say that their reason for nonattendance is a lack of interest in work shops. Five of the 20 respondees to this category are from Zone 3, Idaho.

b.) Within Local Community. There is a marked shift in response to training when the following question is posed: "If additional training for either the prevention, treatment or rehabilitation of heart disease, cancer and stroke patients was offered in your community, would you attend?"

On a Region basis, 409 nurses (91.3%) indicate that they would attend. At least 79% of the responding nurses from every zone indicate that they would attend.

In terms of the desired frequency at which such training should be held, 219 nurses in the region (54%) state that they would be willing to attend monthly meetings. 11.7% indicate a preference for annual meetings while 25.5% of the responding nurses prefer meetings at six month intervals.

3. Desired Course Content

As a means of further specifying continuing education needs, the RNs were asked to indicate the nature of their interest in each of the illnesses of heart disease, cancer, and stroke in terms of: prevention of the disease, treatment of the disease, or rehabilitation of the patient. Respondents were allowed to select more than one service modality in relation to more than one disease, if they chose.

It is quite clear that nurses are significantly more interested in prevention related to heart disease than in prevention of either cancer or stroke. When prevention is related to the combination of all three disease entities, it is responded to by 127 of the 333 RN respondents.

Some state differences are found in the selections made relating prevention to disease category. 42 Montana nurses (42.8%) select interest in prevention of heart disease as important to them. This compares with the 23 Idaho nurses (23.4%), the 17 Nevada nurses (17.3%), and the 16 Wyoming nurses (16.3%) who relate prevention with heart disease alone.

When prevention is related to the three disease categories in combination, 45 Montana nurses (32.8%) indicate interest. The Idaho nurses tend to associate prevention with the triad of diseases to a greater extent: 35 (43.9%) make this association. Fourteen Nevada nurses (31.8%) and 31 Wyoming nurses (25.9%) contribute to this category of response.

Only 1.5% of the Region's nurses associate prevention with cancer and stroke combined as a field of interest.

Nursing interest in treatment of disease by disease category shows a slightly different picture in that more nurses relate treatment to the combination of heart and cancer diseases than is the case in prevention. On a Region basis, treatment of heart disease as a single disease category is of most interest to nurses: 19.9% of the 361 respondees make this association; 37.6% relate treatment with the triad of disease categories as a significant area of interest to the group. Only 2.2% of the respondees relate treatment with the combination of cancer and stroke as an area of interest.

State trends are very consistent with the regional distribution. 36 Montana nurses (50%) associate treatment with heart disease alone as an area of interest. Idaho nurses (23.6%) are second in responding to this area. Nevada (9.7%) and Wyoming (16.6%) are consistent with their selection of prevention related to disease.

In relating RN responses to disease category in terms of interest for continuing education, it is apparent that the nursing emphasis has shifted from heart disease to stroke as the area of greatest interest in rehabilitation education. Montana nurses (47.1%) show the greatest interest in relating rehabilitation and stroke. The other three states are roughly equivalent in their interest.

E. OTHER FACTORS RELEVANT TO CONTINUING EDUCATION

1. Reasons for Working

Throughout the Region, it is quite apparent that the single factor most significant in motivating RNs to work is the need to supplement family income. Of the total of 453 nurses who responded to this question, 48.1% chose this factor. In contrast, only seven nurses (1.5%) responding indicate that their reason for working is the need to pay off some unexpected bills. The proportion of nurses selecting these and other reasons may be summarized as follows:

• supplement family income	48.1%
• self support	12.1
• sole support of family	9.7
• obtain "luxuries of life"	5.9
• pay unexpected bills	1.5
• other	13.9

The category of response chosen as reason for employment does not cluster with any specific years of experience level. That is to

Table IV-8. Assessment of Incentives to Participate in Continuing Education According to Experience of Reporting Registered Nurses

ENCOURAGEMENT TECHNIQUES	YEARS OF PRACTICE			
	(0 - 9)	(10 - 19)	(20 - over)	(Total)
Payment of expenses	92.0%	93.2%	96.9%	93.8%
Released time	81.4	88.1	94.3	87.6
Relief to substitute in absence	64.0	72.7	82.5	72.1
Programs closer to home	98.3	94.3	97.2	96.4
More complete information about existing programs	92.5	90.8	98.8	93.8
Earlier notification of courses	80.6	81.0	94.4	84.3

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[1] Percentages given indicate "great help" or "some help" as opposed to "little help" or "no help".

say, the nurses with the lowest, middle, and highest years of experience chose the category "supplement family income" in the same ratio as the distribution of years of experience.

No significant state or zone trends were identified in these responses.

2. Techniques to Encourage Participation

In order to establish to some extent the degree of help afforded by various methods of easing the burden of continuing education, the nurses in the survey were asked to indicate which methods were "a great help," "some help," "little help," or "no help." The categories to be rated included:

- Payment of expenses
- Released time (no loss of salary)
- Relief to substitute in my absence
- Programs closer to home
- More complete information about existing programs
- Earlier notification of courses
- Other (too few cases to permit analysis)

A majority (minimum of 72.9%) of the responding nurses of the Region indicate that all of the above would be of "great" or "some" help No state or zone varies from this rating trend.

The category rated by the highest percent of nurses (96.8%) as being helpful is "programs closer to home." The least helpful, but still with significant rating (72.9%), is "relief to substitute in my absence."

When responses are compared by years of experience, the indicated trend is for nuses with 20 or more years of experience to show the highest ratio of selecting all categories as being most helpful to them in making better use of continuing education opportunities.

Table IV-8 shows the Region responses in terms of years of experience.

Table IV-9. Percent of Registered Nurses Who Have Had Additional Training or Education

TYPE OF ADDITIONAL PREPARATION	FORMAL EDUCATIONAL BACKGROUND	REGION	IDAHO	MONTANA	NEVADA	WYOMING
None	Diploma	43.1%	48.3%	47.2%	32.4%	37.5%
	Associate of Arts	59.1	62.5	50.0	0.0	75.0
	Baccalaureate	45.5	71.4	0.0	25.0	60.0
	Total	44.6	50.7	45.8	30.8	44.1
Formal	Diploma	45.2	44.4	45.1	43.3	47.5
	Associate of Arts	18.8	14.3	12.5	0.0	100.0
	Baccalaureate	30.4	16.7	44.4	66.7	0.0
	Total	41.8	37.9	42.0	45.5	43.5
On-the-job	Diploma	81.4	78.7	83.7	81.1	80.4
	Associate of Arts	71.4	71.4	55.6	100.0	100.0
	Baccalaureate	65.4	57.1	62.5	50.0	77.8
	Total	79.3	76.0	80.2	81.0	80.6

3. Additional Training

The nurses of the Region were requested to indicate whether or not they had received additional education or on-the-job preparation for work in the clinical area in which they were currently employed.

Over 50% of the 295 respondees from all experience groups have received additional on-the-job training following their formal education. Only the 47 (64.4%) nurses with 20 or more years experience indicate that more than half their group has received additional formal education in a clinical area. This latter group is in marked contrast to the 0 to 9 year experience group. Only 13 (18.8%) nurses in the younger group have received such additional formal education.

When these same data are viewed in the frame of reference of the RNs formal educational background, somewhat more variation in response is found. Table IV-9 shows the frequency and percent of state and region "yes" answers in terms of possession of Diploma, Associate Arts Degree and Bachelor Degree. The same separations are presented in terms of responses to the three categories of continuing education received after graduation; i.e., "none", "formal courses", and "on-the-job training".

Inspection of this table indicates that 28 of the 58 responding Idaho Diploma level nurses (48.3%) have received any training in their clinical practice since graduation. This is in comparison with the overall Region response showing 100, or 43.1% of the 232 responding RNs, falling into this classification.

The variable numbers of respondees in the categories make interpretation somewhat risky, but it appears that in the Associate Arts level there is little continuing formal education in any state in the Region.

F. HEALTH PROBLEM SUPPORT TO CONSUMER AND COMMUNITY

1. Consumer Health Problems

One of the recognized areas of importance in education is that related to patients and their families. In order to explore this area the nurses in the region were asked to rate the training and support of patient and family in terms of a four-point scale ranging from "excellent" to "poor" in relation to clinical conditions of patients. In analysis it was assumed that a combination of "excellent" and "good" ratings, compared with "fair" and "poor" ratings, would indicate the areas in which MS/RMP should place emphasis on required improvement. RN responses are found in Tables IV-10 and IV-11, and are summarized below.

Table IV-10. Quality of Teaching and Support Services as Reported by Registered Nurses

RANK (Good and Excel.)	HEALTH PROBLEMS	REGION		IDAHO		MONTANA		NEVADA		WYOMING	
		Good and Excel.	Fair and Poor	Good and Excel.	Fair and Poor	Good and Excel.	Fair and Poor	Good and Excel.	Fair and Poor	Good and Excel.	Fair and Poor
2	Colostomy	45.7%	54.3%	31.5%	68.5%	50.3%	49.7%	41.3%	58.7%	55.8%	44.2%
4	Ileostomy	41.6	58.4	27.3	72.7	46.2	53.8	40.0	60.0	50.7	49.3
1	Special dietary needs	46.0	64.0	42.2	57.8	48.0	52.0	39.1	60.9	50.6	39.4
3	Amputations	42.7	57.3	41.2	58.8	44.1	55.9	38.6	61.4	44.2	55.8
5	Speech defects	37.8	62.2	37.1	62.9	44.7	55.3	30.2	69.8	29.3	70.7
8	Paralysis	35.1	64.9	27.4	72.6	36.7	63.3	37.0	63.0	39.5	60.5
9	Bowel/bladder incontinence	32.6	67.3	20.5	79.5	34.7	65.3	32.6	67.3	42.1	57.9
6	Tracheostomy	37.6	62.4	25.6	74.4	43.8	66.2	36.4	63.6	40.0	60.0
7	Limited physical activity	37.5	62.5	33.7	66.3	40.8	59.2	39.1	63.9	34.2	65.8

Table IV-11. Quality of Teaching and Support Services, According to Study Zone, as Reported by Registered Nurses

HEALTH PROBLEMS[1]		IDAHO								MONTANA						NEVADA							WYOMING						
			Zone								Zone						Zone							Zone					
	Region Average	State Average	1	2	3	4	5	6	7	State Average	1	2	3	4	5	State Average	1	2	3	4	5	6	State Average	1	2	3	4	5	6
Special dietary needs	46.0%	42.2%	2	2	8	*7*	*9*	*8*	*2*	48.0%	10	*21*	*15*	*13*	14	39.1%	*10*	0	*1*	*1*	*2*	4	50.6%	*7*	*8*	0	5	8	11
Colostomy	45.7	31.5	*4*	*3*	7	*5*	*6*	2	1	50.3	*11*	*25*	11	*13*	*16*	41.3	5	0	*2*	*1*	*2*	*9*	55.8	*9*	*6*	*3*	2	10	*13*
Amputations	42.7	41.2	*5*	2	*13*	*5*	6	3	1	44.1	8	*20*	10	8	*17*	38.6	8	0	*1*	*1*	*2*	5	44.2	*7*	*6*	*2*	3	7	9
Ileostomy	41.6	27.3	*3*	*3*	4	*5*	*6*	2	1	46.2	10	*24*	8	10	*14*	40.0	5	0	*1*	*1*	*2*	*9*	50.7	*9*	*5*	*3*	2	8	11
Speech defects	37.8	37.1	0	2	*11*	4	*9*	*6*	1	44.7	*13*	15	*15*	9	*16*	30.2	5	0	*1*	*1*	0	*6*	29.3	3	2	1	*3*	*6*	7
Tracheostomy	37.6	25.6	2	1	*8*	2	*7*	0	1	43.8	10	*17*	11	9	*13*	36.4	6	0	*2*	*2*	*2*	4	40.0	*6*	*6*	*3*	2	5	*9*
Limited physical activity	37.5	33.7	2	1	*12*	*4*	*6*	1	*2*	40.8	*15*	16	8	8	*13*	39.1	*9*	0	*2*	*1*	1	5	34.2	*5*	*3*	*2*	1	5	*9*
Paralysis	35.1	27.4	2	1	*12*	1	*5*	1	1	36.7	*11*	15	9	4	*15*	37.0	7	0	*2*	*1*	*2*	5	39.5	*7*	3	*2*	3	7	8
Bowel/bladder Incontinence	32.6	20.5	1	1	*6*	2	*4*	2	*1*	34.7	*10*	*16*	4	8	*13*	32.6	5	0	*3*	*1*	*2*	5	42.1	*8*	*5*	*2*	0	6	*11*

[1] The health problems are listed in rank order.

NOTE: Italics indicate a proportion of responses higher than the state average.

- Colostomy Only 28 nurses (7.7%) in the responding regional group of 363 rate the category as excellent. When combined with ratings of "good", the number of nurses increases to 166 (45.7%). This indicates that regional reaction is that this form of education is, at best, fair. No state or zone varies from this trend.

- Ileostomy. Here, 146 Region nurses (41.5%) indicate that the procedures of training and support are excellent or good. No state or zone varies from this trend except in Montana (Zone 2) where 24 of 42 (57.1%) of the reporting nurses report that the available teaching and support is excellent or good. 21 of the Montana reports are in the "good" scale.

- Special Dietary Needs. The trend continues: 168 Region nurses (46%) indicate that the teaching and support of patient and family is excellent or good. No states vary from this pattern. Only two zones (Zone 2 in Nevada and Zone 2 in Wyoming) report more nurses who state that teaching in this area is good as contrasted to fair. The percents reporting by zone are, respectively, 57.7% and 80.0%. A total of 23 nurses compared to 13 are involved in these ratings.

- Amputations. The Region trend continues: 149 Region nurses (42.7%) indicate that the teaching and support of patient and family is excellent or good. There are no state variations in this trend. Only one zone (Montana, Zone 2) with more than ten nurses reporting indicates that at least half (58.6%) of the nurses rate this teaching above the "fair" level.

- Speech Defects. Even fewer of the Region nurses (136 of 359 reporting) indicate that teaching and support are better than "fair". 133 (37%) of the Region nurses rate teaching and support in this area as "poor". There are no state variations in this distribution. No zone indicates that more than 57% of the nurses rate teaching and support procedures better than "fair".

- Paralysis. Only 124 Region nurses (35.1%) indicate that teaching and support of patient and family is better than "fair". No state or zone with more than ten responses indicate that more than 50% of the nurses rate these procedures as being better than "fair".
- Bowel and Bladder Incontinence. The Region trend is the same: 115 of 352 responding nurses (32.6%) rate training and support of patient and family above "fair" or "poor". There are no state variations in this trend. Only one zone with more than ten responses (Wyoming, Zone 1) reports over half of the nurses (57.2%) feeling that the procedures are better than "fair".
- Tracheostomy. 127 of 338 regional respondents (37.5%) rate training and support of patient and family above "fair" or "poor". There are no state or zone responses which vary from this trend.
- Limited Physical Activity There are no variations in trend: 131 of 349 responding region nurses (37.5%) rate training and support of patient and family above "fair" or "poor". No state or zone reports as high as 60% of the nurses varying from this trend.

In summary, neither the Region nor any state or zone report that any substantial number of nurses feel that training or support of patient or family in any of the reported disease categories is excellent. Similarly, the majority of reports indicate that the Region does not do better than a "fair" job in aiding family or patient in coping with the results of physical disease.

2. Community Procedures

In a further effort to determine the extent of satisfaction with procedures of information exchange in the community of practice, Region nurses were requested to comment on practices of information exchange in public education, among health agencies, and in the departments where they practice. As can be seen from Table IV-12, there was wide variation from state to state in the responses to satisfactory dissemination of public information. 37 of 95 nurses (38.9%) reporting from Idaho report the methods as satisfactory. Nurses from Montana and Nevada are about equally divided in saying that public information is satisfactory and unsatisfactory. 35 of 85 nurses (69.8%) from Wyoming consider public information dissemination satisfactory in their state.

Table IV-12. Satisfaction With Procedures as Reported by Registered Nurses

PROCEDURES	REGION	IDAHO	MONTANA	NEVADA	WYOMING
Dissemination of information to the public	47.2%	38.9%	54.2%	50.9%	41.2%
Exchange of patient information between health agencies	48.3	46.7	45.4	56.6	50.0
Exchange of patient information between departments	74.4	75.5	78.2	74.1	66.7

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Idaho (46.6%), Montana (45.3%), Nevada (56.6%) and Wyoming (50%) are consistent in saying that the exchange of patient information among agencies is satisfactory. It is apparent, however, that this opinion is not shared by approximately half of the nurses in the states.

A rather large number of nurses in each state indicate that exchange of patient information between departments where they practice is satisfactory. Nurses in Idaho (75.5%), Montana (77.5%), Nevada (74%), and Wyoming (66.6%) are apparently satisfied with internal transfer of patient information.

Only two zones (Idaho, Zone 6; Wyoming, Zone 5) report a larger number of nurses who are dissatisfied with internal transfer of patient information than are satisfied. In both zones, the difference is only one report and in both zones the total number reporting is under 20.

V. LICENSED PRACTICAL NURSE

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A. INTRODUCTION

1. Sample Size and Distribution

Just over one-half of the 568 licensed practical nurses (LPNs) contacted in the Mountain States responded to the MS/RMP questionnaire. Of these, 75 were not in active practice at the time of the survey and were eliminated from the sample for the purposes of this analysis. The overall response rate was highest in Wyoming (68.8%) and lowest in Nevada (41.2%). Table V-1 shows the response numbers and rates for the Region and each of the states. It also shows how the actual sample was derived by eliminating all inactive LPNs, and how the resulting 212 LPNs are distributed among the states. The analysis and findings described in this report are based on this sample and distribution.

Table V-1. Licensed Practical Nurse Sample Size For Region And States

STATE	TOTAL	(1) CONTACTED	TOTAL	RESPONSE	SAMPLE SIZE	
	NUMBER OF CONTACTS	REGION PROPORTION (%)	NUMBER OF RESPONSES (2)	RESPONSE RATES (%)	NUMBER (3)	REGIONAL PROPORTION (%)
IDAHO	265	46.6	129	48.7	99	46.7
MONTANA	119	21.0	69	58.0	50	23.6
NEVADA	136	23.9	56	41.2	39	18.4
WYOMING	48	8.5	33	68.8	24	11.3
REGION	568	100.0	287	50.5	212	100.0

(1) A 10% sample of LPNs was contacted in each state. Idaho and Montana contacted an additional 5%.

(2) All responses to survey are included in this total.

(3) Only respondents in active practice at time of survey are included in this total.

2. Highlights of the Analysis

- The average Mountain States licensed practical nurse (LPN) has had about 9 years of active practice.

- The great majority of LPNs (90% or more) express the need for continuing education in all heart disease, cancer, and stroke clinical areas.

- LPNs with between 5 and 20 years of active practice are the ones who most frequently express the need for education in almost all areas.

- Methods of education not available to, but desired by, at least half of the LPNs are:

    short-term training course
    WCHEN courses
    workshops

- More LPNs indicate an interest in additional training in the prevention, treatment and rehabilitation of patients for all three disease categories (heart disease, cancer, stroke) than in any single area, category, or lesser combination.

- Nearly four out of five LPNs would attend short-term courses outside the local community if their expenses were paid.

- Most LPNs feel that holding training programs closer to home would be the greatest single stimulus to increased participation of practical nurses in continuing education, and almost all of them would attend short-term courses held in their own communities.

- No more than half of the Mountain States LPNs feel that the teaching and support provided patients and their families in selected health problems is "good" or "excellent."

- A bare majority of LPNs consider the dissemination of health information to the public and procedures for inter-agency exchange of patient information to be "satisfactory," although a substantial majority feel that intra-facility exchange of information is satisfactory.

B. SELECTED PERSONAL AND PROFESSIONAL CHARACTERISTICS

In this selection, a partial profile of the Mountain States licensed practical nurses is drawn. The characteristics selected are those considered of particular relevance to the major areas examined analytically in subsequent sections.

1. Age

The Region average age of LPN was 46.0 years. 68.3% of the 198 responding LPNs were between 34 and 58 years of age. The only zone with more than ten respondents which varied from this pattern was in Nevada (Zone 6). In that zone, 9 of the 13 respondees (69.3%) were less than 34.9 years of age.

2. Years of Active Practice

(a) Region. The average Mountain State LPN has been in active practice for 9.1 years. 68.3% of 193 responding LPNs have been in practice at least 1.9 years and at most 16.3 years.

(b) States. Nearly half (43.9%) of all Mountain States LPNs who report fewer than 10 years of practice are to be found in Idaho. Within the State of Idaho itself, this experience comprises 58.6% of all Idaho LPNs.

The other states generally were consistent with the regional trend. Noticeable zone variations for the 0 to 9 years of experience group include:

- Idaho: Zone 3 (21 of 34 reporting)
  - Zone 5 (12 of 20 reporting)
  - Zone 6 (7 of 11 reporting)
- Montana: Zone 1 (8 of 13 reporting)
  - Zone 2 (8 of 12 reporting)
- Nevada: Zone 1 (12 of 13 reporting)
  - Zone 6 (10 of 12 reporting)
- Wyoming: Zone 5 (2 of 3 reporting)
  - Zone 6 (4 of 5 reporting)

3. Membership in Professional Organization

(a) Region. Regionally, 201 LPNs responded to the question as to membership in either state or national professional organizations. Of this number, 112 (55.9%) indicated membership in one or the other, or both.

(b) States. There is considerable variation from state to state in LPN membership in a professional organization, as the following figures show:

- Idaho: 68.4% (65 of 95)
- Montana: 37.5% (18 of 48)
- Nevada: 37.1% (13 of 35)
- Wyoming: 65.2% (15 of 23)

There were six zones (Idaho: Zones 1 and 7; Montana: Zones 2, 4 and 5; Nevada: Zone 6) where more nurses reported non-membership than membership in a state or national organization.

4. Nature of Clinical Practice

In order to obtain some indication of the relationship between expressed interest and concern for continuing education and the actual practical experience LPNA were asked to indicate whether or not they encountered patients with specified heart disease, cancer, and stroke conditions in the course of their daily clinical practice.

One out of five LPNs (19.8%) do not work in clinical areas. Of those who do, a substantial majority (over 70% in all cases) indicate they encounter patients in each of the clinical areas listed. The clinical areas and the LPN responses for the Region and each state are included in Table V-2. Examination of this table shows that all three disease categories (heart disease, cancer, stroke) are represented among the five clinical areas most frequently mentioned by practical nurses as comprising a part of their clinical practice.

- hypertensive cardiovascular disease
- congestive heart failure
- cancer of the gastro-intestinal tract
- cerebral vascular accident
- cancer of the genito-urinary tract

Table V-2. Clinical Conditions Observed in the Practice of Licensed Practical Nurses

REGION RANK	CLINICAL CONDITION	REGION	IDAHO	MONTANA	NEVADA	WYOMING
--	Do not work in clinical areas	19.8%	19.2%	22.0%	25.6%	8.3%
2	Congestive heart failure	95.2	98.6	93.0	86.2	100.0
8	Cardiac arrhythmias	91.1	94.7	88.9	82.8	100.0
1	Hypertensive cardiovascular disease	95.7	98.6	96.2	85.2	100.0
9	Myocardial infarction	89.8	95.1	92.0	78.6	84.6
12	Rheumatic heart disease	87.6	94.4	77.3	77.3	93.3
16	Rheumatic fever	81.4	82.6	85.0	81.0	73.3
17	Congenital heart defect	81.2	85.4	81.3	73.9	78.6
4	Cerebral vascular accident	94.0	97.0	92.6	85.7	100.0
11	Peripheral vascular disease	89.5	90.0	90.0	83.3	100.0
14	Stroke rehabilitation	85.7	89.5	77.3	83.3	87.5
3	Cancer of gastro-intestinal tract	94.1	98.4	93.5	88.9	87.5
5	Cancer of genito-urinary tract	93.9	98.3	93.1	85.2	93.3
13	Cancer of skin	87.1	90.9	88.0	80.0	81.3
7	Cancer of respiratory tract	91.9	96.6	92.3	84.0	85.7
18	Cancer of central nervous system	74.0	80.5	70.0	66.7	71.4
15	Cancer of oral cavity, head and neck	84.9	84.8	87.5	71.4	100.0
6	Cancer of breast	93.5	96.5	92.9	83.3	100.0
10	Lymphoma and leukemia	89.7	92.7	90.5	80.8	92.9

C. NEED FOR CONTINUING EDUCATION

1. Expressed Need

After establishing the pattern of LPN practice with various clinical entities a question was asked, "Do you feel you need help in keeping abreast of changes in the care of the patients suffering from the clinical conditions listed below?"

On a regional basis, a minimum of 87.5% of the responding 119 LPNs indicated that they needed help in all areas. No significant difference occurs among areas on the Region level.

Table V-3 displays the LPN responses by state in relation to area of need. Examination of the figures in this table shows that in no state did fewer than 85% of the responding LPNs indicate a need for help in all categories of clinical conditions. Also, while there is some minor rank order shifting in each of the states, the general rank order pattern in the states is quite similar to the Regional pattern.

2. Factors Affecting Need for Education

Table V-4 shows the percentage of LPNs in the Region who assert a need for additional education in several clinical condition areas in terms of the number of years of active practice of the LPNs. This comparison is made to determine whether there are significant differences in felt need for training which can be related to the number of years of experience in the field of practical nursing.

It is apparent from an examination of Table V-4 that, while some minor variations do occur from one experience group to another in expressed need for education in particular, the general pattern is quite similar for all groups. In none of the groups do fewer than 80% of the LPNs report that they need education in any clinical area.

D. DESIRED METHODS AND PROCEDURES OF CONTINUING EDUCATION

1. Preferred Educational Procedures

A number of continuing education programs are already available in the Region. The LPNs were asked about the types of programs they knew to be available, which programs are used, and what programs are needed. Emphasis was placed on training programs dealing with heart disease, cancer, and stroke.

The data in Table V-5 show that even when continuing education methods are available they are not used by a majority of the LPNs. With but one exception (professional journals and books) less than 50% of the responding LPNs indicate that the programs are used when they are available.

Table V-3. Need for Continuing Education in Clinical Conditions
As Reported by Licensed Practical Nurses

REGION RANK	CLINICAL CONDITION	REGION	IDAHO	MONTANA	NEVADA	WYOMING
2	Congestive heart failure	95.4%	98.6%	90.9%	96.9%	89.5%
5	Cardiac arrhythmias	95.0	96.7	93.8	90.4	100.0
4	Hypertensive cardiovascular disease	95.3	97.0	84.4	100.0	100.0
6	Myocardial infarction	94.2	96.8	87.1	93.1	100.0
14	Rheumatic heart disease	90.0	88.5	93.1	90.3	89.5
16	Rheumatic fever	88.9	87.2	93.4	87.1	89.5
1	Congenital heart defect	96.3	94.7	100.0	96.6	94.7
11	Cerebral vascular accident	92.3	92.4	89.6	93.6	94.4
3	Peripheral vascular disease	95.4	92.9	96.4	96.5	100.0
10	Stroke rehabilitation	92.4	94.2	87.8	91.2	95.0
15	Cancer of gastro-intestinal tract	89.9	92.3	83.9	85.3	100.0
13	Cancer of genito-urinary tract	90.3	93.8	83.9	87.6	94.5
18	Cancer of skin	87.5	89.6	83.9	85.7	89.5
8	Cancer of respiratory tract	93.1	95.3	83.8	94.0	100.0
12	Cancer of central nervous system	91.3	95.0	90.4	86.2	88.8
9	Cancer of oral cavity, head and neck	92.7	93.3	89.7	90.0	100.0
17	Cancer of breast	88.6	90.2	79.3	87.1	100.0
7	Lymphoma and leukemia	93.8	95.3	82.8	97.1	100.0

Table V-4. Need for Continuing Education in Clinical Conditions According to Experience of Reporting Licensed Practical Nurses

CLINICAL CONDITIONS	YEARS OF PRACTICE (0 - 4)	(5 - 19)	(20 - over)
Congestive heart failure	95.9%	95.3%	90.0%
Cardiac arrhythmias	93.5	96.2	87.5
Hypertensive cardiovascular disease	93.8	96.3	90.9
Myocardial infarction	91.1	96.3	85.7
Rheumatic heart disease	84.4	92.5	85.7
Rheumatic fever	84.8	90.7	85.7
Congenital heart defect	95.4	97.3	87.5
Cerebral vascular accident	91.5	92.4	88.9
Peripheral vascular disease	92.8	97.2	87.5
Stroke rehabilitation	87.5	94.2	90.0
Cancer of gastro-intestinal tract	85.4	90.4	100.0
Cancer of genito-urinary tract	83.0	92.6	100.0
Cancer of skin	84.1	86.7	100.0
Cancer of respiratory tract	68.8	95.1	88.9
Cancer of central nervous system	89.1	92.1	87.5
Cancer of oral cavity, head and neck	93.3	92.0	88.9
Cancer of breast	84.1	89.9	90.0
Lymphoma and leukemia	89.1	96.4	87.5

Only 4.7% of the LPNs report that they use available workshops, and available educational radio is used by only 5.0%.

No state or zone variations are significantly different from this trend.

The data in Table V-5 further show responses with respect to educational methods that are needed but not available. The relative proportion of the two types of responses ("available and used" and "not available but needed") for each method is portrayed graphically in Figure V-1. These same data have also been combined to derive a single percentage for both responses, which can serve as an index of relative support for each training method by Mountain States LPNs. The results of this combination are shown in Table V-6. These figures should be examined together with the graphs in Figure V-1 in order to determine the relative weight given the index by each type of response.

For example in Table V-6 next to the highest combined support is indicated for short-term training courses. However, Figure V-1 shows that almost all of this support comes from the "not available but needed" response where it ranks first, as against "available and used," where it ranks last. On the other hand while educational television ranks ninth in indicated support (Table V-6), most of its support is also to be found in the "not available but needed" area, where it ranks fourth. Distinctions such as these may be of considerable importance in determining where the need for new or expanded training programs actually is to be found.

These same data have also been looked at in an effort to ascertain whether any variation owing to years spent in practice is reflected in the responses. Examination of these data (Table V-7) shows that there are some observable and consistent differences in educational method preferences among LPNs with varying degrees of experience.

- LPNs with more than 20 years of practice give preference ratings that are substantially lower than other experience groups for all educational methods except educational films and professional journals and books.

- No LPNs with more than 20 years of practice indicate a preference for educational radio.

- Short-term training courses and workshops are given the highest preference ratings by all LPNs with fewer than 20 years of practice.

- All LPNs, regardless of number of years of practice, exhibit the least need for conventions/meetings as a method of continuing education.

Table V-5. Availability and Need for Methods of Continuing Education As Reported by Licensed Practical Nurses

METHODS	REGION		IDAHO		MONTANA		NEVADA		WYOMING	
	% Avail. and Used	% Not Avail. but Needed	% Avail. and Used	% Not Avail. but Needed	% Avail. and Used	% Not Avail. but Needed	% Avail. and Used	% Not Avail. but Needed	% Avail. and Used	% Not Avail. but Needed
Short-term training courses	4.7	69.1	6.8	69.6	3.0	48.5	6.9	75.9	0.0	94.4
Workshops	16.3	52.3	13.8	52.3	22.9	34.3	12.1	66.7	20.0	60.0
Special classes on site	32.9	45.5	31.1	42.6	40.0	31.4	34.5	55.2	22.2	66.7
Educational films	45.7	27.4	43.8	23.3	47.4	23.7	51.5	33.3	40.0	40.0
Educational television	8.2	48.5	3.2	48.4	10.0	40.0	8.0	56.0	23.5	52.9
Educational radio	5.0	43.0	1.8	42.1	0.0	42.9	13.6	36.4	14.3	57.1
Professional journals and books	53.3	16.0	60.3	8.8	51.6	16.1	46.9	25.0	42.1	26.3
Programmed instruction	27.2	44.8	27.3	40.0	37.0	33.3	34.6	46.2	0.0	76.5
Conventions/ meetings	43.2	14.4	39.7	11.1	57.1	7.1	50.0	16.7	23.5	35.3
WCHEN courses	13.4	52.4	10.3	41.0	21.1	57.9	10.0	50.0	14.3	78.6

Table V-6. Extent of Support for Methods of Continuing Education As Reported by Licensed Practical Nurses

METHODS	REGION	IDAHO	MONTANA	NEVADA	WYOMING
	Combined % Avail. & Used, Not Avail. but Needed	Combined % Avail. & Used, Not Avail. but Needed	Combined % Avail. & Used, Not Avail. but Needed	Combined % Avail. & Used, Not Avail. but Needed	Combined % Avail. & Used, Not Avail. but Needed
Short-term training courses	73.8	75.4	51.5	72.8	94.4
Workshops	68.6	66.1	57.2	78.8	80.0
Special classes on site	78.4	73.7	71.4	89.7	88.9
Educational films	73.1	67.1	71.1	84.8	80.0
Educational television	56.7	51.6	50.0	64.0	76.4
Educational radio	48.0	43.9	42.9	50.0	71.4
Professional journals and books	69.3	69.1	67.7	71.9	68.4
Programmed instruction	72.0	67.3	70.3	80.8	76.5
Conventions/meetings	57.6	50.8	64.2	67.7	58.8
WCHEN courses	65.8	51.3	80.0	60.0	92.9

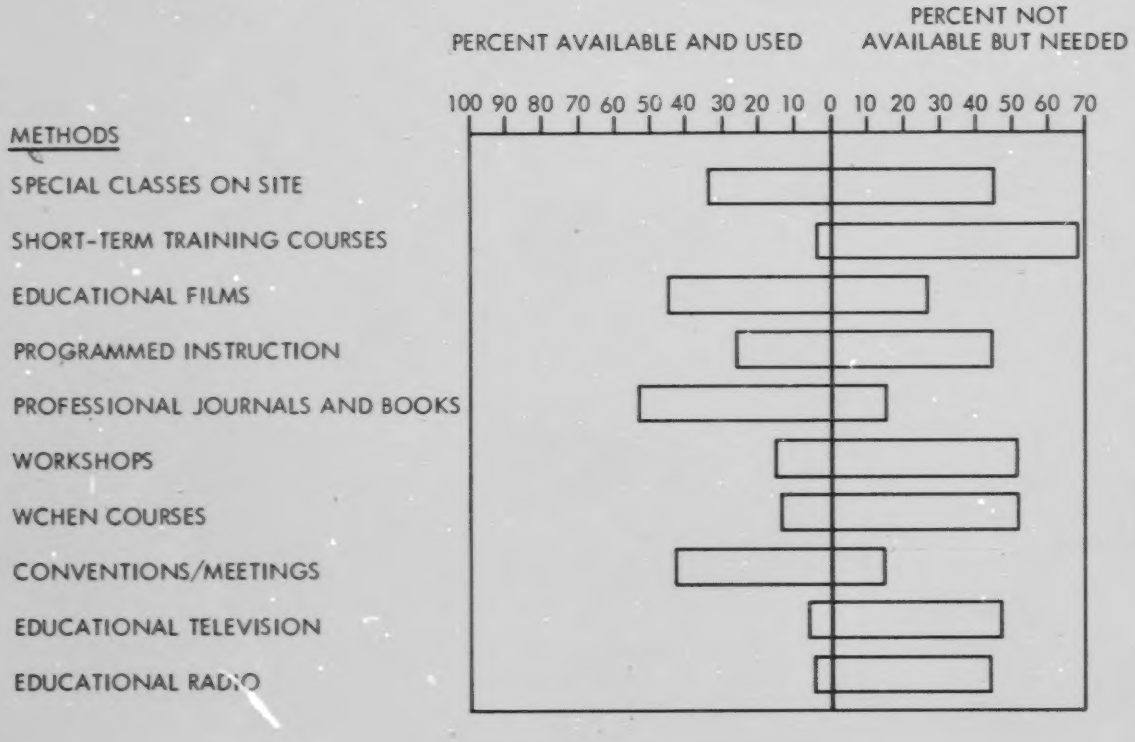

Figure V-1. Ranking of Licensed Practical Nurses' Support for Methods of Continuing Education

Table V-7. Needed Methods of Continuing Education According to Experience of Reporting Licensed Practical Nurses

METHODS	YEARS OF PRACTICE		
	(0 - 4)	(5 - 19)	(20 - over)
Short-term training courses	71.1%	71.1%	50.0%
Workshops	56.5	54.2	20.0
Special classes on site	51.1	38.2	50.0
Educational films	22.4	28.1	38.5
Educational television	40.9	52.7	42.8
Educational radio	47.5	43.5	0.0
Professional journals & books	12.5	15.8	30.0
Programmed instruction	43.6	42.6	44.4
Conventions/meetings	14.0	15.3	12.5
WCHEN courses	45.4	55.3	40.0

2. Attendance at Courses

(a) Outside Local Community. The LPN response to the question dealing with attendance outside the local community was consistent with the RN responses. In both groups, more nurses would attend if expenses were paid. In the LPN regional group, 44 of 119 (37%) indicated that they would pay their own expenses to attend courses outside their community. On the other hand, 134 of 169 respondees (79.2%) indicated that they would participate if their expenses were paid.

LPNs who indicate that they would not attend meetings outside their community, even if their expenses were paid, were asked to indicate the reasons which would prevent them from attending. The reasons and the percent of responses received by each are:

- No one to replace me at work (57.1%)
- Family responsibilities (62.9%)
- Not interested in such workshops (17.1%)
- Other (No data)

No significant state or zone variations were observed in this variable.

(b) Within local Community. When asked if they would be willing to attend continuing education programs in their own community, 186 of the responding 193 LPNs (96.4%) indicated that they would attend.

Every state and zone indicated that at least 75% of the LPNs from that area would attend local programs.

3. Desired Course Content

As a means of further specifying continuing education needs, the LPNs were asked to indicate the nature of their interest in each of the illnesses of heart disease, cancer, and stroke in terms of: prevention of the disease, treatment of the disease, or rehabilitation of the patient. Respondents were allowed to select more than one service modality in relation to more than one disease, if they chose.

(a) Prevention. LPN preferences clearly favor training in prevention of heart disease:

- 113 Region LPNs of 186 responding (60.7%) indicate interest in prevention of heart disease. All states and zones with more than ten responses reported that at least half of their LPNs were interested in this area. Only Wyoming Zone 6 had a significant reversal of trend. Six of seven responding LPNs indicated no interest.

- Exactly half of the responding Region LPNs indicated interest in prevention of cancer. There was some state variation in LPN expression of interest in education in the prevention of cancer:

Idaho:	47.6%
Montana:	56.9%
Nevada:	51.0%
Wyoming:	34.7%

- The LPN response to prevention of stroke was similar to prevention of cancer. 88 of 186 responding LPNs (47.3%) express interest. State responses are consistent with this trend.

(b) Treatment. The Region LPN response to interest in treatment of heart disease, cancer, and stroke as a subject for continuing education brought about the following findings:

- 142 of 186 reporting Region LPNs (81.7%) express interest in treatment of heart disease. All states and zones with more than ten respondents report more LPNs interested than disinterested in this topic.

- 126 of 186 reporting Region LPNs (67.7%) express interest in treatment of cancer. All states and zones with more than ten respondents report more LPNs interested than disinterested in this topic.

- 105 of 186 reporting region LPNs (56.5%) express interest in treatment of stroke. State responses are consistent with this trend. Zone 5 in Idaho reports 10 to 17 respondents disinterested but Zone 1 in Nevada reports 10 of 13 nurses particularly interested in treatment of stroke as a subject for continuing education.

(c) Rehabilitation. Mountain States LPNs show some variations in extent of education interest in rehabilitation both in terms of disease category and residence.

- 103 of 186 reporting Region LPNs (55.3%) express interest in rehabilitation of heart disease patients as a topic for continuing education. State responses are consistent with this trend. One zone reports more (nine) LPNs disinterested than interested (eight) in this subject.

- Only 77 of 186 reporting Region LPNs (41.3%) indicate interest in rehabilitation of heart disease patients as a topic for continuing education. State and zone responses are consistent with the Region trend.

- 110 of 186 reporting Region LPNs (59%) indicate interest in rehabilitation of stroke patients as a topic for continuing education. State and zone responses are consistent with the Region trend.

E. OTHER FACTORS RELEVANT TO CONTINUING EDUCATION

1. Reasons for Working

The LPNs of the Region were asked to indicate their reasons for working. In analysis of this question, the LPNs were separated according to years of experience in relation to the reason in order to determine if greater age and experience created different reasons for working. Table V-8 shows the distribution of regional responses to the six categories of response.

The LPNs in all years of experience groups selected "supplement family income" as the prime reason for working. Other important reasons for working were because the LPN was the "sole support of family," and "self support." No other category was rated above 5% by the responding LPNs as a reason for working. Zone and state reporting was consistent.

2. Techniques to Encourage Participation

In order to establish to some extent the degree of help afforded by various methods of easing the burden of continuing education, the LPNs in the survey were asked to indicate which methods were "a great help," "some help," "little help," or "no help." The categories to be rated included:

- Payment of expenses
- Released time (no loss of salary)
- Relief to substitute in my absence
- Programs closer to home
- More complete information about existing programs
- Earlier notification of courses
- Other (too few cases to permit analysis)

Table V-8. Main Reason for Working, According to Experience of Reporting Licensed Practical Nurses

MAIN REASON FOR WORKING	YEARS OF PRACTICE (0 - 4)	 (5 - 19)	 (20 - over)	 (Total)
Self support	15.5%	17.4%	23.5%	17.4%
Sole support of family	12.1	11.0	11.8	11.4
Supplement family income	55.2	60.6	47.1	57.6
Provide children with college education	3.4	1.8	5.9	2.7
Desire to obtain luxuries	5.2	2.8	5.9	3.8
Need to pay off unexpected bills	1.7	4.6	0.0	3.3

A majority (minimum of 56.9%) of the responding LPNs of the Region indicate that all of the above would be of "great" or "some" help. No state or zone varies from this rating trend.

The category rated by the highest percent of LPNs (89.5%) as being helpful is "programs closer to home." The least helpful is "relief to substitute in my absence."

While there is some variation in the responses to the questions in terms of the experience level, the general picture is one of consistency.

3. Frequency of Attendance

When asked how often meetings should be held, the majority (124 of 185 LPNs) indicate that monthly meetings are preferred. No state or zone indicates a larger ratio of preference for six months, yearly or other time intervals for meetings. The next highest category of response (34 of 185 respondents) recommends meetings at six month intervals.

F. HEALTH PROBLEM SUPPORT TO CONSUMER AND COMMUNITY

1. Consumer Health Problems

One of the recognized areas of importance in education is that related to patients and their families. In order to explore this area the LPNs in the Region were asked to rate the training and support of patient and family in terms of a four-point scale ranging from "excellent" to "poor" in relation to clinical conditions of patients. In analysis, it was assumed that a combination of "excellent" and "good" ratings compared with "fair" and "poor" ratings, would indicate the areas in which MS/RMP should place emphasis on required improvement. LPN responses are found in Tables V-9 and are summarized below.

- Throughout the Region, LPNs report considerable dissatisfaction with community education of patient and family in relation to all health problems.

- Colostomy was the only area in which more than half (50.7%) of the reporting LPNs indicated that support of patient and families was better than fair.

- No state rated training and support of family and patient better than fair in more than 60% of the reports.

- Only one zone (Zone 5 in Idaho) varied from this pattern. Here, 9 of 13 reporting LPNs (69.2%) rated training of patient and family in speech defect management above the "fair" level.

Table V-9. Quality of Teaching and Support Services as Reported by Licensed Practical Nurses

RANK (Good and Excel.)	HEALTH PROBLEMS	REGION		IDAHO		MONTANA		NEVADA		WYOMING	
		Good and Excel.	Fair and Poor	Good and Excel.	Fair and Poor	Good and Excel.	Fair and Poor	Good and Excel.	Fair and Poor	Good and Excel.	Fair and Poor
1	Colostomy	50.7%	49.3%	51.6%	48.4%	54.2%	45.8%	40.8%	59.2%	55.5%	44.5%
6	Ileostomy	40.9	59.1	43.4	56.6	43.3	56.7	29.1	70.9	44.4	55.6
2	Special dietary needs	49.3	50.7	42.8	57.2	54.8	45.2	50.0	50.0	61.1	38.9
3	Amputations	45.1	54.9	45.8	54.2	46.8	53.2	45.8	54.2	40.0	60.0
7	Speech defects	39.8	60.2	38.3	61.7	51.7	48.3	34.6	65.4	33.3	66.7
8	Paralysis	38.0	62.0	37.1	62.9	43.4	56.6	40.0	60.0	30.0	70.0
9	Bowel/bladder incontinence	37.6	62.4	40.7	59.3	36.7	63.3	37.5	62.5	30.0	70.0
5	Tracheostomy	41.2	58.8	40.7	59.3	38.7	61.3	43.5	56.5	44.4	55.6
4	Limited physical activity	44.1	55.9	42.9	57.1	44.9	55.1	52.2	47.8	36.8	63.2

2. Community Procedures

In a further effort to determine the extent of satisfaction with procedures of information exchange in the community of practice, Region LPNs were asked to comment on practices of information exchange in public education, among health agencies, and in departments where they practice. Their responses, as shown in Table V-10 may be summarized as follows:

(a) Information to the public. Of the responding LPNs, 77 (52.4%) feel that the dissemination of information to the public concerning heart disease, cancer, and stroke is satisfactory. Only one zone with more than ten respondees (Zone 5 in Idaho) reports as many as 60% of nurses who considered these procedures satisfactory.

(b) Inter-agency exchange of patient data. Current procedures concerning exchange of patient information among health agencies are considered adequate by 71 of 132 responding LPNs (53.7%). In only one zone (Zone 3 in Idaho) with more than ten respondents was such information exchange rated as satisfactory by more than 60% of the LPNs.

(c) Interdepartmental patient data exchange. Procedures in this area are considered satisfactory by a sizable majority of the LPNs throughout the Region. Of the 143 who responded, 101 (70.6%) feel that the procedures for exchanging patient information between departments in the facilities where they practice are adequate.

- Satisfaction is manifested by more LPNs in Idaho (77.8%) and Montana (74.2%) than in Nevada (55.6%) or Wyoming (63.6%).

- Two zones in Idaho show satisfactory responses higher than the average response for the Region and for the state:

  Zone 3: 82.6%

  Zone 5: 84.6%

- One zone in Nevada shows satisfactory responses below the state as well as the Region average:

  Zone 1: 45.5%

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Table V-10. Satisfaction with Procedures as Reported by Licensed Practical Nurses

PROCEDURES	REGION	IDAHO	MONTANA	NEVADA	WYOMING
Dissemination of information to the public	52.4%	54.4%	61.3%	39.3%	50.0%
Exchange of patient information between health agencies	53.8	54.1	66.7	42.9	45.0
Exhange of patient information between departments	70.6	77.8	74.2	55.6	63.6

VI. MEDICAL/LABORATORY TECHNOLOGISTS

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A. INTRODUCTION

1. Sample Size and Distribution

A majority (56%) of the 568 medical and laboratory technologists (M/LT) contacted in the Mountain States responded to the MS/RMP questionnaire. Of these, 107 were not in active practice at the time of the survey and were eliminated from the sample for the purposes of this analysis. The overall response rate was highest in Montana (59.1%) and lowest in Wyoming (50.8%). Table VI-1 shows the response numbers and rates for the Region and each of the states. It also shows how the actual sample was derived by eliminating all inactive M/LTs, and how the resulting 304 M/LTs are distributed among the states. The analysis and findings described in this report are based on this sample and distribution.

Table VI-1. Medical/Laboratory Technologists

STATE	TOTAL CONTACTED		TOTAL RESPONSE		ACTUAL SAMPLE SIZE(2)	
	Number of Contacts	Region Proportion %	Number of Responses(1)	Response Rate (%)	Number	Regional Proportion
IDAHO	234	31.9	127	54.3	84	27.6
MONTANA	276	37.6	163	59.1	119	39.2
NEVADA	100	13.6	58	58.0	46	15.1
WYOMING	124	16.9	63	50.8	55	18.1
REGION	734	100.0	411	56.0	304	100.0

(1) All responses to survey are included in this total.

(2) Only respondents in active practice at time of survey are included in this total.

2. Highlights of the Analysis

- The average Mountain States medical/laboratory technologist (M/LT) has had nearly 11 years of active practice.

- More than half of the M/LTs express the need for continuing education in all heart disease, cancer, and stroke clinical areas.

- Those M/LTs who have fewer than 5 years of active practice express the least need for education in each of the areas.

- Close to half of the M/LTs indicate a desire for three methods of education they feel are not generally available to them:

  WCHEN courses

  educational television

  special classes

- More M/LTs are interested in training for treatment than they are for prevention or rehabilitation for all three disease categories (heart disease, cancer, stroke).

- Two-thirds of the M/LTs would attend short-term training courses outside the local community if their expenses were paid.

- Most M/LTs feel that holding training programs closer to home would be the greatest single stimulus to increased M/LT participation in continuing education, and about four out of five would attend short-term courses held in their own communities.

- M/LTs also feel rather strongly that other incentives to their participation in educational programs are desirable:

  more complete information about existing programs

  released time with no loss of salary

- The teaching and support provided patients and their families in selected health problems is considered "good" or "excellent" by no more than 40% of the M/LTs.

- About half of the M/LTs consider the dissemination of health information to the public to be satisfactory, although about 70% of them feel that inter-agency and intra-facility exchanges of patient information are satisfactory.

B. SELECTED PERSONAL AND PROFESSIONAL CHARACTERISTICS

In this section, a partial profile of the Mountain States medical/laboratory technologists (M/LTs) is drawn. The characteristics selected are those considered of particular relevance to the major problem areas examined analytically in subsequent sections.

1. Age

a. Region. For the Region as a whole, the average age of the M/LTs is 36.1 years, and two-thirds of the 295 who reported their age are between 25 and 46 years of age. In general, state distributions follow closely the regional distribution, with a few exceptions as noted below.

b. States. There are more younger technologists (under 35 years of age) in Nevada and Wyoming than in either of the other states. Some characteristics of the age distribution of M/LTs within the states are given below:

- Idaho. The younger (under 35 years of age) M/LTs, representing 5.2% of the 80 respondents, are concentrated in Zone 3 (27), Zone 5 (5), and Zone 4 (3).

- Montana. The younger (under 35 years of age) M/LTs, representing 46.9% of the 115 respondents are located mainly in Zone 5 (19), Zone 2 (15), and Zone 3 (13).

- Nevada. In Nevada the younger M/LTs are located mainly in Zone 1 (18), and Zone 6 (7). For the state as a whole, 27 of the 47 responding (57.4%) are 34 years of age or under.

- Wyoming. Like Nevada, Wyoming has a large number of younger M/LTs: 57.4% of the 54 responding are 34 years of age or under. They are concentrated primarily in Zone 6 (14), Zone 1 (7), Zone 4 (4), and Zone 2 (3).

2. Years of Active Practice

Regional and state distributions of Mountain States medical/laboratory technologists (M/LTs) in terms of years of active practice, as an index of relative experience, are given below.

a. Region. The average Mountain States M/LT has been in practice for 10.7 years, and two-thirds of the 283 responding have been in practice between 2 and 19 years. More than half (55.4%) of those reporting have 9 or less years of active practice. This distribution is consistent among the states in the Region.

b) States. Idaho M/LTs report fewer years of active practice than do those in the other states. Of the 75 Idaho M/LTs, 47 (62.6%) have 9 or fewer years of active practice. Wyoming is next with 62.0% (31 of 50 respondents), then Montana with 50% (56 of 112) and Nevada with 50% (23 of 46) in the 0 to 9 years of active greater category. Within the states, these less experienced M/LTs tend to be concentrated as follows:

- Idaho:

  Zone 3 (29)
  Zone 5 (6)
  Zone 4 (5)

- Montana:

  Zone 5 (24)
  Zone 2 (21)
  Zone 3 (16)

- Nevada:

  Zone 1 (23)
  Zone 6 (8)

- Wyoming:

  Zone 6 (18)
  Zone 1 (9)
  Zone 2 (4)

3. Membership in State or National Professional Organization:

Mountain States medical/laboratory technologists were asked to indicate whether or not they were members of a state or national professional organization.

a) Region. Regionally, 291 M/LTs responded to the question, "Do you belong to a State or National Professional Organization". Of these, 204 (70.1%) belong to a state or national professional organization, and 87 do not. In general, this proportion holds throughout the region for all four states.

b) States. Leading the states is Wyoming with 78.8% (41 of 52) of its M/LTs indicating membership in state and national organizations. Montana is next with 74.8% (83 of 111), then Idaho with 63.4% (52 of 82) and finally Wyoming with 60.9 (28 of 46). Within the states, non-membership is distributed as follows:

- Idaho. In Zone 1, 5 of the 8 M/LTs are not members of state or national professional organizations; in Zone 3, 16 of the 48 reporting are not members; and in Zone 5, 5 of the 8 are not members bers.

- Montana. In Zone 2, 10 of the 34 M/LTs reporting are not members of state or national professional organizations; and in Zone 5, 9 of 33 are not members.

- Nevada. In Zone 1, 17 of the 31 M/LTs reporting are not members of state or national professional organizations.

- Wyoming. In Zone 1, 4 of the 10 M/LTs reporting are not members of state or national professional organizations; and in Zone 2, 3 of the 7 reporting are not members.

4. Nature of Clinical Practice

In order to obtain some indication of the relationship between expressed interest and concern for continuing education and actual practical experience, M/LTs were asked to indicate whether or not they encountered patients with specified heart disease, cancer, and stroke conditions in the course of their daily clinical practice.

More than four out of ten M/LTs (42.8%) do not work in clinical areas. Of those who do, a substantial majority (at least 80% in all cases except stroke rehabilitation -- 65%) indicate they encounter patients in each of the 18 clinical areas listed. The clinical areas and the M/LT responses for the Region and each state are included in Table VI-2. Examination of this table shows that of all three disease categories (heart disease, cancer, stroke), only stroke is not represented among the five clinical areas most frequently mentioned by M/LTs as comprising a part of their clinical practice:

- lymphoma and leukemia
- cancer of the gastro-intestinal tract
- rheumatic heart disease
- myocardial infarction
- congestive heart failure

Table VI-2. Clinical Conditions Observed in the Practice of Medical/Laboratory Technologists

REGION RANK	CLINICAL CONDITION	REGION	IDAHO	MONTANA	NEVADA	WYOMING
--	Do not work in clinical areas	42.8%	45.2%	45.4%	39.1%	36.4%
5	Congestive heart failure	92.3	100.0	87.5	90.0	91.7
10	Cardiac arrhythmias	90.5	100.0	89.7	80.0	81.8
6	Hypertensive cardiovascular disease	92.3	100.0	87.1	91.7	90.0
4	Myocardial infarction	92.4	100.0	87.5	90.9	91.7
3	Rheumatic heart disease	92.7	100.0	85.3	100.0	91.7
7	Rheumatic fever	91.4	100.0	81.8	100.0	92.3
11	Congenital heart defect	89.0	100.0	83.3	80.0	90.0
14	Cerebral vascular accident	86.1	95.8	85.7	70.0	80.0
12	Peripheral vascular disease	88.0	95.7	86.7	80.0	83.3
18	Stroke rehabilitation	64.6	54.5	70.8	70.0	86.7
2	Cancer of gastro-intestinal tract	93.3	100.0	90.3	100.0	81.8
8	Cancer of genito-urinary tract	90.7	95.5	90.0	91.7	81.8
16	Cancer of skin	79.4	77.3	76.0	81.8	90.0
13	Cancer of respiratory tract	88.0	90.9	86.7	91.7	81.8
17	Cancer of central nervous system	78.3	87.0	76.0	63.6	80.0
15	Cancer of oral cavity, head and neck	81.2	90.9	77.8	70.0	80.0
9	Cancer of breast	90.7	95.5	83.3	100.0	90.9
1	Lymphoma and leukemia	93.7	100.0	90.3	100.0	83.3

C. NEED FOR CONTINUING EDUCATION

Medical and laboratory technologists throughout the Region were requested to estimate their need for assistance in keeping abreast of changes in the care of patients suffering from any of the 18 clinical conditions related to heart disease, cancer and stroke.

1. Expressed Need

Table VI-3 shows how the Mountain States M/LTs rate the indicated clinical conditions in terms of strong or moderate need for education. The clinical conditions are listed in their rank order of need. On a regional basis, lymphoma and leukemia received more strong and moderate need responses than did the other clinical conditions, and stroke rehabilitation received fewer strong and moderate need responses than did the others. Examination of the state rankings shows that:

- Idaho M/LTs are above the regional need average in 14 of the 18 clinical conditions, and above the need average for each of the other states in 5 conditions.
- Montana M/LTs are above the regional need average in 10 of the clinical conditions, and above the other states in 5.
- Nevada M/LTs are above the regional need average in 10 of the clinical conditions, and above the other states in 17.
- Wyoming M/LTs are above the regional need average in only 5 of the clinical conditions, and above the other states in only 1.

2. Factors Affecting Need for Education

Table VI-4 indicates the percent of M/LTs in the Region who assert a need for additional education in the several clinical condition areas in terms of the number of years of active practice of the M/LTs. This comparison is made to determine whether there are significant differences in expressed need for education which are related to the number of years of experience in the profession.

It is apparent from an examination of Table IV-4 that the expression of need for education is high (above 50%) in all three experiences groups for all but 4 clinical conditions and below 40% for only one group for one condition (12.5% for congestive heart failure in the 0 to 4 years of experience group).

Table VI-3. Need for Continuing Education in Clinical Conditions As Reported by Medical/Laboratory Technologists

REGION RANK	CLINICAL CONDITION	REGION	IDAHO	MONTANA	NEVADA	WYOMING
6	Congestive heart failure	74.7%	78.3%	68.8%	88.9%	73.7%
9	Cardiac arrhythmias	72.0	75.0	66.7	77.8	73.7
12	Hypertensive cardiovascular disease	70.7	75.0	70.9	55.6	72.2
4	Myocardial infarction	76.5	83.3	69.7	88.9	73.7
2	Rheumatic heart disease	77.7	83.3	75.8	72.8	76.5
3	Rheumatic fever	77.1	82.6	75.0	72.8	76.4
5	Congenital heart defect	75.6	79.1	74.2	88.9	66.7
15	Cerebral vascular accident	66.3	66.7	70.0	55.5	64.7
7	Peripheral vascular disease	72.8	73.9	75.0	66.6	70.6
18	Stroke rehabilitation	51.3	43.5	43.3	55.5	56.3
10	Cancer of gastro-intestinal tract	72.0	73.9	73.3	72.8	66.7
8	Cancer of genito-urinary tract	72.3	73.9	74.2	72.8	66.7
14	Cancer of skin	67.1	69.5	68.9	58.3	66.7
11	Cancer of respiratory tract	72.0	73.9	74.2	70.0	66.7
13	Cancer of central nervous system	68.8	69.5	69.0	70.0	66.6
17	Cancer of oral cavity, head and neck	65.4	65.2	68.9	54.6	66.6
16	Cancer of breast	66.3	65.2	66.6	66.7	66.7
1	Lymphoma and leukemia	79.3	84.0	77.1	84.7	73.6

Table VI-4. Need for Continuing Education in Clinical Conditions According to Experience of Reporting Medical/Laboratory Technologists

CLINICAL CONDITIONS	YEARS OF PRACTICE (0 - 4)	(5 - 19)	(20 - over)
Congestive heart failure	12.5%	76.7%	77.8%
Cardiac arryhthmias	60.9	72.7	75.0
Hypertensive cardiovascular disease	60.9	72.7	62.5
Myocardial infarction	58.3	81.8	80.0
Rheumatic heart disease	66.7	79.5	80.0
Rheumatic fever	66.7	79.5	75.0
Congenital heart defect	62.5	76.7	87.5
Cerebral vascular accident	59.1	61.9	77.8
Peripheral vascular disease	65.2	71.4	88.9
Stroke rhabilitation	45.4	48.8	42.8
Cancer of gastro-intestinal tract	60.9	74.4	66.7
Cancer of genito-urinary tract	60.9	75.0	66.7
Cancer of skin	59.1	65.9	66.7
Cancer of respiratory tract	60.9	76.7	66.7
Cancer of central nervous system	59.1	69.0	66.7
Cancer of oral cavity, head and neck	59.1	65.1	66.7
Cancer of breast	62.5	65.9	66.7
Lymphoma and leukemia	68.0	80.8	84.6

Greater need for education in all areas is expressed by either the 5-19 years of practice group (8 areas) or the over 20 years of practice group (10 areas). In none of the clinical condition areas does the 0-5 year group express the greater need.

D. DESIRED METHODS AND PROCEDURES OF CONTINUING EDUCATION

1. Preferred Educational Procedures

A number of continuing education programs are already available in the Region. The M/LTs were asked about the types of programs they knew to be available, which programs are used, and what programs are needed. Emphasis was placed on training programs dealing with heart disease, cancer, and stroke.

The data in Table VI-5 show that even when current continuing education methods are available they are not extensively used by the M/LTs. With two exceptions (professional journals and books, and conventions/meetings), no more than one-third of the M/LTs take advantage of currently available programs. No state or zone variations are significantly different from this trend.

The data in Table VI-5 further show responses with respect to educational methods that are needed but not available. The relative proportion of the two types of responses ("available and used" and "not available but needed") for each method is portrayed graphically in Figure VI-1. These same data have also been combined in a manner to derive a single percentage for both responses which can serve as an index of relative support for each training method by Mountain States M/LTs. The results of this combination are shown in Table VI-6. These figures should be examined together with the graphs in Figure VI-1, in order to determine the relative weight given the index by each type of response.

For example, in Table VI-6 the highest combined support is indicated for professional journals and books. However, Figure VI-1 shows that almost all of this support comes from the "available and used" response. On the other hand, while educational television ranks eighth in indicated support, (Table VI-6), most of its support is to be found in the "not available but needed" area where it ranks second. Distinctions such as these may be of considerable importance in determining where the need for new or expanded training programs actually is to be found.

These same data have also been looked at in an effort to ascertain whether or not any variation owing to years spent in practice is reflected in the responses. Examination of these data (Table VI-7) shows that there are some observable and consistent differences in educational method preferences among M/LTs with varying degrees of experience.

- Conventions/meetings and professional journals and books are considered to be the least needed educational methods by all M/LTs, regardless of length of practice.

- M/LTs in the youngest group in terms of experience (0 to 4 years of practice) consistently show the lowest expression of need for all methods.

- Four educational methods are among the top five for all experience groups:

  special classes on site

  WCHEN courses

  educational television

  short-term training courses

2. Attendance at Courses

a) Outside Local Community. As a means of further assessing both need and motivation for continuing education on the part of medical/laboratory technologists throughout the Region, each was asked if he would attend short-term training courses in the prevention, treatment, and rehabilitation of heart, cancer and stroke patients at a center outside his local community, either at his own expense or if all expenses were paid. As might be expected, more M/LTs would attend short-term training with "expenses paid" (66% of the 147 responding) than would attend "at own expense" (22.5% of the 120 responding). Those who say they would not attend even if expenses were paid, also indicate that the primary inhibiting factors are, "family responsibilities" (40.8% of all responses) and "no interest in such workshops" (32.6% of all responses).

There are no major differences among the states with regard to responses in this area.

b) Within Local Community. The situation described above changes considerably when the medical/laboratory technologists are asked if they would take advantage of additional training for the prevention, treatment, or rehabilitation of heart disease, cancer and stroke patients, if such training were made available to them in their own communities. Under such circumstances, 78.3% (123 of the 157 responding) indicate that they would attend additional training of this kind if offered in their communities. There are no major differences among states in this response.

Table VI-5. Availability and Need for Methods of Continuing Education As Reported by Medical/Laboratory Technologists

METHODS	REGION		IDAHO		MONTANA		NEVADA		WYOMING	
	% Avail. and Used	% Not Avail. but Needed	% Avail. and Used	% Not Avail. but Needed	% Avail. and Used	% Not Avail. but Needed	% Avail. and Used	% Not Avail. but Needed	% Avail. and Used	% Not Avail. but Needed
Short-term training courses	12.3	46.2	14.3	53.6	11.1	40.0	9.1	63.6	13.6	40.9
Workshops	36.5	35.7	30.0	43.3	40.4	36.2	38.5	30.8	36.0	28.0
Special classes on site	21.2	47.8	34.4	43.8	15.2	47.8	27.3	45.5	12.5	54.2
Educational films	34.5	31.8	35.7	28.6	40.0	26.7	23.1	61.5	29.2	29.2
Educational television	5.1	48.0	7.7	53.8	5.0	45.0	0.0	60.0	4.5	40.9
Educational radio	4.3	36.6	3.8	50.0	1.7	30.8	0.0	44.4	0.0	26.3
Professional journals and books	72.3	10.8	70.3	18.9	76.5	5.9	73.3	13.3	66.7	7.4
Programmed instruction	16.3	46.7	26.1	43.5	15.8	42.1	10.0	60.0	9.5	52.4
Conventions/ meetings	57.3	11.1	46.7	16.7	63.8	8.5	46.7	20.0	64.0	4.0
WCHEN courses	3.4	49.2	0.0	46.7	4.2	33.3	0.0	80.0	6.7	66.7

Table VI-6. Extent of Support for Methods of Continuing Education As Reported by Medical/Laboratory Technologists

METHODS	REGION Combined % Avail.& Used, Not Avail. but Needed	IDAHO Combined % Avail.& Used, Not Avail. but Needed	MONTANA Combined % Avail.& Used, Not Avail. but Needed	NEVADA Combined % Avail.& Used, Not Avail. but Needed	WYOMING Combined % Avail.& Used, Not Avail. but Needed
Short-term training courses	58.5	67.9	51.1	69.7	54.5
Workshops	72.2	73.3	76.6	69.3	64.0
Special classes on site	69.0	78.2	63.0	69.8	66.7
Educational films	66.3	64.3	66.7	84.6	58.4
Educational television	53.1	61.5	50.0	60.0	45.4
Educational radio	40.9	53.8	32.5	44.4	26.3
Professional journals and books	83.1	89.2	82.4	86.6	74.1
Programmed instruction	63.0	69.6	57.9	70.0	62.4
Conventions/meetings	68.4	68.4	72.3	66.7	68.0
WCHEN courses	52.6	46.7	37.5	80.0	73.4

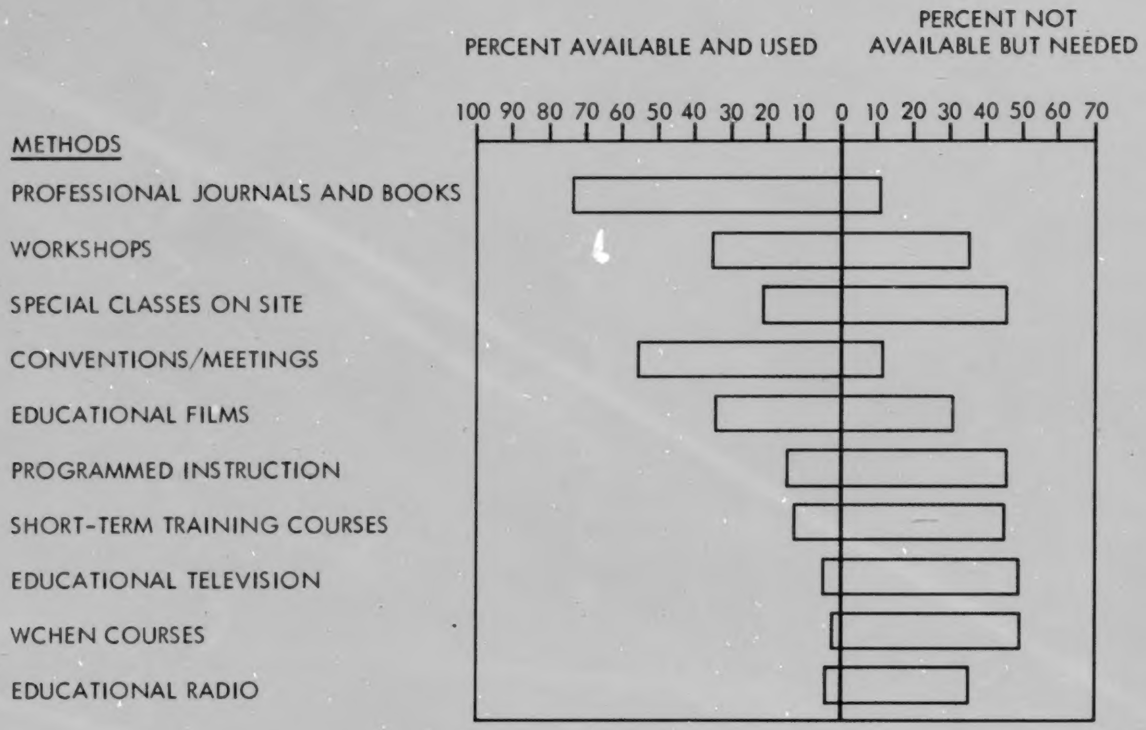

Figure VI-1. Ranking of Medical/Laboratory Technologists' Support for Methods of Continuing Education

Table VI-7. Needed Methods of Continuing Education According to Experience of Reporting Medical/Laboratory Technologists

METHODS	YEARS OF PRACTICE (0 - 4)	(5 - 19)	(20 - over)
Short-term training courses	26.9%	59.2%	40.0%
Workshops	15.4	44.4	25.0
Special classes on site	33.3	57.6	50.0
Educational films	20.8	33.9	43.8
Educational television	31.8	48.0	81.2
Educational radio	30.4	32.6	66.7
Professional journals & books	0.0	12.5	15.8
Programmed instruction	21.7	58.3	66.7
Conventions/meetings	0.0	12.9	18.8
WCHEN courses	40.0	53.3	50.0

3. Desired Course Content

As a means of further specifying continuing education needs, the M/LTs were asked to indicate the nature of their interest in each of the illnesses of heart disease, cancer, and stroke in terms of: prevention of the diseases, treatment of the disease, or rehabilitation of the patient. Respondents were allowed to select more than one service modality in relation to more than one disease, if they chose.

a) Prevention

- In expression of need for additional training in the prevention of disease, M/LTs give a slight edge to the category of cancer (41.0%) over heart disease (39.1%) and stroke (37.2%).

b) Treatment

- In the area of treatment, nearly half of the M/LTs (47.4%) express need in the cancer category.
- Training for treatment of patients with heart disease and stroke is also desired by more M/LTs (43.2% and 39.4%, respectively) than for prevention or rehabilitation of any of the three disease categories.

c) Rehabilitation

- Proportionately fewer M/LTs are interested in additional training for patient rehabilitation in any of the three disease categories.
- Of M/LTs who are interested, the highest interest is in the area of stroke rehabilitation (23.3%).

d) Combined Interests

- Of all M/LTs indicating preferences in the training areas for all diseases, the area most frequently selected is treatment (43.5%) and the disease category most emphasized is heart disease (36.6%).
- For all diseases, least training interest is shown for rehabilitation (17.3%), and for all training areas M/LTs show the least interest in stroke (29.7%).

E. OTHER FACTORS RELEVANT TO CONTINUING EDUCATION

1. Reasons for Working

For the Region as a whole, "supplement family income" ranks first as the main reason for working for 29.3% of the medical/laboratory technologists. This and other indicated reasons for working are listed below in rank order for the 297 M/LTs in the Region who responded to this question:

Rank		
1.	Supplement family income	29.3%
2.	Self-supporting	27.6
3.	Sole support of family	18.9
4.	Obtain "luxuries of life"	4.0
5.	Support children in college	2.7
6.	Pay unexpected bills	1.0
7.	Other - (no data)	

Table VI-8 shows the response for each main reason for working in terms of the years of active practice of those responding. Examination of this table shows that the most frequently selected reason for working ("supplement family income"), has proportionately more respondents in the 0 to 4 years of active practice category than do the 5 to 19 years or 20 and over years of active practice groups. Those who are working primarily as "sole support of family" are more likely to have 5 to 19 years and 20 or over years of active practice. Those who are self-supporting are most likely to be in the 5 to 19 years and 20 or over years of active practice categories.

The top ranking reasons for working (supplement family income, sole support, and self-supporting) were also looked at according to the sex and marital status of the respondent. 86 of the 87 indicating "supplement family income" as their main reason for working are female and married. In contrast, 39 of the 56 indicating "sole support of family" as their main reason for working are male and married. Of the 82 indicating "self support" as their main reason for working, 48 are female and single; 6 are male and single, 12 are male and married, 2 were female and married.

2. Techniques to Encourage Participation

In order to establish to some extent the degree of help afforded by various methods of easing the burden of continuing education, the M/LTs in

Table VI-8. Main Reason for Working According to Experience of Reporting Medical/Laboratory Technologists

MAIN REASON FOR WORKING	YEARS OF PRACTICE (0 - 4)	 (5 - 19)	 (20 - over)	 (Total)
Self support	24.0%	27.2%	31.8%	27.1%
Sole support of family	12.0	19.6	20.4	17.7
Supplement family income	40.0	28.5	20.4	30.3
Provide children with college education	2.7	1.9	6.8	2.9
Desire to obtain luxuries	5.3	4.4	2.3	4.3
Need to pay off unexpected bills	2.7	0.6	0.0	1.1

the survey were asked to indicate which methods were "a great help", "some help", "little help", or "no help".

A majority (minimum of 49.2%) of the responding M/LTs of the Region indicate that all categories listed below would be of "great" or "some" help. No state or zone varies from this rating trend.

The category rated by the highest percent of M/LTs (75.9%) as being helpful is "programs closer to home." The least helpful, but still with significant rating (49.2%), is "relief to substitute in my absence." All the categories and response percentages for each are listed below:

- Payment of expenses (71.0%)
- Released time (no loss of salary) (74.5%)
- Relief to substitute in my absence (49.2%)
- Programs closer to home (75.9%)
- More complete information about existing programs (75.4%)
- Earlier notification of courses (57.8%)
- Other (too few cases to permit analysis)

When responses are examined in terms of years of active practice, the following points of interest emerge:

- Proportionately more M/LTs in the 5 to 19 years of active practice and the 20 and over years of active practice categories rate all techniques as of "great help" than do those in the 0 to 4 years of active practice category.
- The most helpful method (programs closer to home) is felt to be of great help to a greater proportion of technologists in the 5 to 19 and 20 and over years of active practice categories than to those of the 0 to 4 years of active practice category.
- "More complete information" is felt to be of great help by proportionately more in the 0 to 4 years and 20 and over years of active practice categories.

3. Frequency of Attendance

Frequency of attendance was another area probed for those M/LTs who say they would take special training if offered locally. The most common time interval mentioned, regardless of interest area or residence, is "once a month" (51.6% of 122 respondents). The other most popular time intervals are favored by less than half of those preferring monthly training: "every six months" (21.3%), "once a year" (17.2%).

F. HEALTH PROBLEM SUPPORT TO CONSUMER AND COMMUNITY

1. Consumer Health Problems

One of the recognized areas of importance in education is that related to patients and their families. In order to explore this area the M/LTs in the region were asked to rate the training and support of patient and family in terms of a four-point scale ranging from "excellent" to "poor" in relation to clinical conditions of patients. In analysis it was assumed that a combination of "excellent" and "good" ratings, compared with "fair" and "poor" ratings, would indicate the areas in which MS/RMP should place emphasis on required improvement. M/LT responses are found in Table IV-9 and are summarized below:

- Throughout the Region, M/LTs express considerable dissatisfaction with community education of patient and family in relation to all health problems.
- In no problem area does a majority of LPN's give a "good" or excellent "response", and for only two areas do more than 40% of them give such ratings (amputations 43.9% and special dietary needs 43.4%).
- The states show ratings generally consistent with those for the Region, although Wyoming leads all the rest in expressing the lowest proportion of "good" or "excellent" responses in all problem areas.

2. Community Procedures

In a further effort to determine the extent of satisfaction with procedures of information exchange in the community of practice, Region M/LTs were asked to comment on practices of information exchange in public education, among health agencies, and in departments where they practice. Their responses, as shown in Table VI-10 may be summarized as follows:

a) Information to the public. Of the responding M/LTs, less than half (47.9%) feel that the dissemination of information to the public concerning heart disease, cancer, and stroke is satisfactory. Of all the PTs, only those in Wyoming and Nevada show a majority giving satisfactory responses.

Table VI-9. Quality of Teaching and Support Services As Reported by Medical/Laboratory Technologists

RANK (Good and Excel.)	HEALTH PROBLEMS	REGION		IDAHO		MONTANA		NEVADA		WYOMING	
		Good and Excel.	Fair and Poor	Good and Excel.	Fair and Poor	Good and Excel.	Fair and Poor	Good and Excel.	Fair and Poor	Good and Excel.	Fair and Poor
5	Colostomy	38.0%	62.0%	47.1%	52.9%	33.4%	66.6%	50.0%	50.0%	25.0%	75.0%
3	Ileostomy	39.1	61.9	49.9	50.1	30.0	70.0	57.1	42.9	25.0	75.0
2	Special dietary needs	43.4	57.6	56.2	43.8	27.3	72.7	66.7	33.3	33.3	66.7
1	Amputations	43.9	56.1	46.7	53.3	47.6	52.4	55.6	44.4	25.0	75.0
4	Speech defects	39.0	61.0	37.5	62.5	51.8	48.2	37.5	62.5	9.1	90.9
6	Paralysis	37.5	62.5	50.0	50.0	32.6	68.4	66.7	33.3	8.3	91.7
9	Bowel/bladder incontinence	31.5	68.5	53.3	46.7	15.8	84.2	50.0	50.0	16.7	83.3
7	Tracheostomy	36.5	63.5	50.0	50.0	31.5	68.5	50.0	50.0	18.2	81.8
8	Limited physical activity	34.5	65.5	50.0	50.0	24.0	76.0	44.5	55.5	27.2	72.8

Table VI-10. Satisfaction with Procedures as Reported by Medical/Laboratory Technologists

PROCEDURES	REGION	IDAHO	MONTANA	NEVADA	WYOMING
Dissemination of information to the public	47.9%	48.4%	41.7%	50.0%	58.3%
Exchange of patient information between health agencies	67.7	80.0	61.1	72.7	61.9
Exchange of patient information between departments	73.0	75.8	75.0	66.7	69.2

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b) Inter-agency exchange of patient data. About two-thirds (67.7%) of the Region M/LTs feel that current procedures concerning the exchange of patient data among health agencies are satisfactory. M/LTs in Idaho show the most satisfaction in this area.

c) Interdepartmental patient data exchange. Procedures in this area are considered satisfactory by a sizeable majority (73.0%) of the Region's M/LTs. Nevada M/LTs are somewhat below those in the other states in expressing satisfaction here.

VII. PHYSICAL THERAPIST

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A. INTRODUCTION

1. Sample Size and Distribution

A substantial majority (77%) of the 135 physical therapists (PT) contacted in the Mountain States responded to the MS/RMP questionnaire. Of these, 15 were not in active practice at the time of the survey and were eliminated from the sample for the purposes of this analysis. The overall response rate was highest in Montana (83.3%) and lowest in Idaho (72.2%). Table VII-1 shows the response numbers and rates for the Region and each of the states. It also shows how the actual sample was drawn by eliminating all inactive PTs, and how the resulting 89 PTs are distributed among the states. The analysis and findings described in this report are based on this sample and distribution.

Table VII-1. Physical Therapist Sample Size For Region And States

STATE	TOTAL CONTACTED		TOTAL RESPONSES		ACTUAL SAMPLE SIZE (2)	
	No. of Contacts	Proportion (%)	No. of Responses (1)	Response Rate (%)	Number	Regional Proportion (%)
IDAHO	36	26.7	26	72.2	18	20.2
MONTANA	36	26.7	30	83.3	27	30.3
NEVADA	34	25.1	27	79.4	25	28.1
WYOMING	29	21.5	21	72.4	19	21.4
REGION	135	100.0	104	77.0	89	100.0

(1) All responses to survey, including those from inactive personnel, are included here in this total.

(2) Only respondents in active practice at time of survey are included in this total.

2. Highlights of the Analysis

- The average Mountain States physical therapist (PT) has had about 10 years of active practice.
- At least half of the PTs express the need for continuing education in nearly all heart disease, cancer, and stroke clinical areas.

- PTs with fewer than 5 years of active practice are well above the regional average in expressing need for education in most areas.

- More than half of the PTs indicate a desire for three methods of education they feel are not generally available to them:

  educational television

  WCHEN courses

  workshops

- More PTs are interested in training for rehabilitation than they are for prevention and treatment for all three categories and are particularly interested in stroke rehabilitation.

- Almost all PTs would attend short-term training courses outside their local community if their expenses were paid, and half of them would pay their own expenses in order to attend.

- Most PTs feel that holding training programs closer to home would be the greatest single stimulus to increased PT participation in continuing education, and all of them say they would attend short-term courses held in their own communities.

- PTs also stress two other incentives to their participation in educational programs:

  payment of expenses

  released time with no loss of salary

- The teaching and support provided patients and their families in selected health problems is considered to be "good" or "excellent" by less than half of the PTs.

- Less than one-third of the PTs consider the dissemination of health information to the public and procedures for inter-agency exchange of patient information to be satisfactory, although a substantial majority feel that intra-facility patient data exchange is satisfactory.

B. SELECTED PERSONAL AND PROFESSIONAL CHARACTERISTICS

In this section, a partial profile of the Mountain States physical therapist (PT) is drawn. The characteristics selected are those considered of particular relevance to the major problem areas examined analytically in subsequent sections.

1. Age

   a) Region. For the Region as a whole, the average age of the PTs is 36 years, and two-thirds of them are between 28 and 44 years of age. In general, state distributions follow closely the regional distribution, with a few exceptions as noted below.

   b) States. There are proportionately more younger PTs in Wyoming (72.3% are under 40 years of age) and more older PTs in Nevada (40.0% are over 40 years of age).

      - The younger Wyoming PTs are distributed evenly over the state (except for Zone 3 where no PTs responded).

      - The older Nevada PTs are concentrated in Zones 1 and 6.

2. Years of Active Practice

   Regional and state distributions of Mountain States physical therapists (PTs) in terms of years of active practice, as an index of relative experience, are given below.

   a) Region. The average Mountain States PT has been in practice for 10.4 years, and more than two-thirds of the 79 responding have been in practice between 4 and 17 years. Over half (54.5%) reporting have been in practice from 5 to 14 years.

   b) States. PTs with the fewest number of years of active practice are in Wyoming, those with the most in Idaho and Nevada.

      - In Wyoming, 64.2% of the PTs have fewer than 10 years of practice.

      - In Idaho, 59.0% have had more than 10 years of practice.

      - In Nevada, 57.0% have had more than 10 years of practice.

3. Membership in State or National Professional Organization

   Nearly all of the responding PTs (94.0%) are members of a state or national professional organization. There are no significant differences among the states or within the zones of the states regarding membership in state or national professional organizations.

4. Nature of Clinical Practice

In order to obtain some indication of the relationship between expressed interest and concern for continuing education and actual practical experience, PTs were asked to indicate whether or not they encountered patients with specified heart disease, cancer, and stroke conditions in the course of their daily clinical practice.

Only one of ten PTs (10.1%) does not work in a clinical area.* Of those who do, it is apparent from the figures in Table VII-2 that for most of them their practice tends to be more limited than that of other health professionals. The clinical conditions that more than 90% of them come in contact with are all in the stroke area:

- stroke rehabilitation
- cerebral vascular accident
- peripheral vascular disease

Other conditions most PTs come in contact with are related to these conditions:

- cancer of the central nervous system
- hypertensive cardiovascular disease

C. NEED FOR CONTINUING EDUCATION

Physical therapists throughout the Region were asked to estimate their need for assistance in keeping abreast of changes in the care of patients suffering from any of 18 clinical conditions related to heart disease, cancer, and stroke.

1. Expressed Need

Table VII-3 shows how the Mountain States PTs rate the indicated clinical conditions in terms of strong or moderate need for education. The clinical conditions are listed in rank order of need. On a regional basis, stroke rehabilitation received more strong and moderate need responses than did any other clinical condition listed. In contrast, cancer of the genito-urinary tract received the least proportion of strong and moderate need responses of any condition listed. Examination of the state rankings shows that:

- Idaho PTs are among the lowest in expression of educational need. They are above the regional need average in only 3 of

Table VII-2. Clinical Conditions Observed in the Practice of Physical Therapists

REGION RANK	CLINICAL CONDITION	REGION	IDAHO	MONTANA	NEVADA	WYOMING
--	Do not work in clinical areas	10.1%	22.2%	3.7%	16.0%	0.0%
7	Congestive heart failure	50.0	33.3	53.3	40.0	77.8
14	Cardiac arrhythmias	29.7	9.1	27.3	22.2	83.3
5	Hypertensive cardiovascular disease	72.7	54.5	78.9	64.3	90.9
9	Myocardial infarction	46.7	9.1	73.3	33.3	71.4
8	Rheumatic heart disease	47.5	22.2	60.0	50.0	50.0
13	Rheumatic fever	34.9	18.2	56.3	30.0	16.7
10	Congenital heart defect	41.5	20.0	53.8	40.0	50.0
2	Cerebral vascular accident	96.1	93.8	92.0	100.0	100.0
3	Peripheral vascular disease	94.1	92.9	91.7	94.1	100.0
1	Stroke rehabilitation	96.2	93.3	92.0	100.0	100.0
17	Cancer of gastro-intestinal tract	21.1	9.1	33.3	10.0	40.0
16	Cancer of genito-urinary tract	26.3	9.1	33.3	22.2	50.0
18	Cancer of skin	21.1	9.1	33.3	0.0	50.0
11	Cancer of respiratory tract	39.5	27.3	42.9	41.7	50.0
4	Cancer of central nervous system	75.9	85.7	76.5	57.1	88.9
12	Cancer of oral cavity, head and neck	37.2	9.1	42.9	45.5	57.1
6	Cancer of breast	70.0	66.7	75.0	66.7	66.7
15	Lymphoma and leukemia	29.7	11.1	57.1	0.0	40.0

Table VII-3. Need for Continuing Education in Clinical Conditions As Reported by Physical Therapists

REGION RANK	CLINICAL CONDITION	REGION	IDAHO	MONTANA	NEVADA	WYOMING
5	Congestive heart failure	76.8%	53.9%	88.9%	54.6%	100.0%
11	Cardiac arrhythmias	68.6	46.2	77.8	60.0	90.0
4	Hypertensive cardiovascular disease	83.7	76.9	88.8	69.3	100.0
9	Myocardial infarction	71.2	46.2	88.8	58.4	88.9
8	Rheumatic heart disease	73.5	53.9	94.4	54.6	81.8
7	Rheumatic fever	73.6	46.2	94.1	66.6	81.8
10	Congenital heart defect	71.1	46.2	94.8	54.6	77.8
2	Cerebral vascular accident	88.7	93.3	83.3	87.5	92.9
3	Peripheral vascular disease	88.4	86.7	95.7	76.5	92.8
1	Stroke rehabilitation	89.3	93.8	88.0	84.2	93.4
16	Cancer of gastro-intestinal tract	50.0	23.1	64.7	46.5	66.7
18	Cancer of genito-urinary tract	44.9	15.4	64.7	40.0	55.6
17	Cancer of skin	50.0	16.7	64.7	40.0	77.8
12	Cancer of respiratory tract	65.3	57.1	70.6	54.6	80.0
6	Cancer of central nervous system	75.5	71.4	95.0	41.7	81.9
14	Cancer of oral cavity, head and neck	58.4	30.8	75.1	50.0	77.8
13	Cancer of breast	64.7	69.2	73.7	40.0	66.7
15	Lymphoma and leukemia	54.2	30.8	75.1	40.0	66.7

the clinical conditions and are lowest of all the states in 11 of the 18 clinical conditions.

- Montana PTs show above regional average need for education in 16 of the 18 clinical conditions, and close to the regional average for the remaining 2.
- Nevada PTs show the lowest expression of educational need of all the states. They are well below the regional need average in all 18 clinical conditions, and lowest of all the states in 6 of the conditions.
- Wyoming PTs are the highest in all the states in expression of educational need. They are well above the regional average in all 18 of the clinical conditions, and highest of all states in 8 of them.

2. Factors Affecting Need for Education

Table VII-4 indicates the percent of PTs in the Region who assert a need for additional education in the several clinical condition areas in terms of the number of years of active practice of the PTs. This comparison is made to determine whether there are significant differences in expressed need for education which are related to the number of years of experience in the profession.

It is apparent from an examination of Table VII-4 that the expression of need for education is high (above 50%) in all three experience groups for all but 6 clinical conditions and below 40% for only one group for one condition (38.7% for rheumatic fever in the 5 to 19 years of experience group).

- The 0 to 4 years of experience group shows a range of from 41.7% to 100.0% in expressed need. PTs in this group are equal to or higher than those in the other experience groups in 11 of the 18 clinical condition areas.
- The 5 to 19 years of experience group shows a range of from 38.7% to 89.4%. PTs in this group are equal to or higher than those in the other experience groups in 6 of the clinical areas.
- The 20 and over years of experience group shows a range of from 50.0% to 83.3%. PTs in this group are equal to or higher than those in the other experience groups in 4 of the clinical areas.

Table VII-4. Need for Continuing Education in Clinical Conditions According to Experience of Reporting Physical Therapists

CLINICAL CONDITIONS	YEARS OF PRACTICE		
	(0 - 4)	(5 - 19)	(20 - over)
Congestive heart failure	75.0%	75.0%	50.0%
Cardiac arryhthmias	66.7	67.7	50.0
Hypertensive cardiovascular disease	83.3	50.0	75.0
Myocardial Infarction	75.0	43.8	50.0
Rheumatic heart disease	75.0	50.0	50.0
Rheumatic fever	75.0	38.7	80.0
Congenital heart defect	75.0	53.1	50.0
Cerebral vascular accident	100.0	89.4	66.7
Peripheral vascular disease	92.3	89.1	60.0
Stroke rehabilitation	100.0	86.0	83.3
Cancer of gastro-intestinal tract	41.7	50.0	50.0
Cancer of genito-urinary tract	41.7	41.4	50.0
Cancer of skin	50.0	44.8	50.0
Cancer of respiratory tract	58.3	65.6	50.0
Cancer of central nervous system	75.0	77.8	60.0
Cancer of oral cavity, head and neck	54.5	58.6	50.0
Cancer of breast	62.6	59.4	75.0
Lymphoma and Leukemia	63.6	44.8	50.0

D. DESIRED METHODS AND PROCEDURES OF CONTINUING EDUCATION

1. Preferred Educational Procedures

A number of continuing education programs are already available in the Region. The PTs were asked about the types of programs they knew to be available, which programs are used, and what programs are needed. Emphasis was placed on training programs dealing with heart disease, cancer, and stroke.

The data in Table VII-5 show that, even when current continuing education methods are available, they are not extensively used by the PTs. With two exceptions (professional journals and books, and conventions/meetings) less than 40% of the responding PTs indicate that they take advantage of currently available programs. No state or zone variations are significantly different from this trend.

The data in Table VII-5 further show responses with respect to educational methods that are needed but not available. The relative proportion of the two types of responses ("available and used" and "not available but needed") for each method is portrayed graphically in Figure VII-1. These same data have also been combined in a manner to derive a single percentage for both responses which can serve as an index of relative support for each training method by Mountain States PTs. The results of this combination are shown in Table VII-6. These figures should be examined together with the graphs in Figure VI-1, in order to determine the relative weight given the index by each type of response.

For example, in Table VI-6 the highest combined support is indicated for professional journals and books. However, Figure VI-1 shows that almost all of this support comes from the "available and used" response. On the other hand, while educational television ranks seventh in indicated support, most of its support is to be found in the "not available but needed" area where it ranks second. Distinctions such as these may be of considerable importance in determining where the need for new or expanded training programs actually is to be found.

These same data have also been looked at in an effort to ascertain whether or not any variation owing to years spent in practice is reflected in the responses. Examination of these data (Table VII-7) shows that there are some observable and consistent differences in educational method preferences among nurses with varying degrees of experience.

- Conventions/meetings, and professional journals and books are considered to be the least needed educational methods by all PTs, regardless of length of practice.

Table VII-5. Availability and Need for Methods of Continuing Education As Reported by Physical Therapists

METHODS	REGION		IDAHO		MONTANA		NEVADA		WYOMING	
	% Avail. and Used	% Not Avail. but Needed	% Avail. and Used	% Not Avail. but Needed	% Avail. and Used	% Not Avail. but Needed	% Avail. and Used	% Not Avail. but Needed	% Avail. and Used	% Not Avail. but Needed
Short-term training courses	26.5	44.1	28.6	28.6	31.8	45.5	33.3	38.9	7.1	64.3
Workshops	24.2	51.5	42.9	28.6	18.2	45.5	18.8	68.8	21.4	64.3
Special classes on site	38.7	30.6	66.7	25.0	38.1	28.6	25.0	31.3	30.8	38.5
Educational films	37.5	23.4	64.3	14.3	18.2	27.3	31.3	18.8	50.0	33.3
Educational television	3.4	59.3	0.0	53.8	4.5	63.6	0.0	53.8	9.1	63.6
Educational radio	5.2	46.6	8.3	33.3	4.8	52.4	0.0	35.7	9.1	63.6
Professional journals and books	78.7	9.3	85.7	0.0	83.3	8.3	68.2	9.1	80.0	20.0
Programmed instruction	15.0	43.3	7.7	30.8	18.2	50.0	21.4	28.6	9.1	63.6
Conventions/ meetings	71.4	10.0	84.6	0.0	72.0	20.0	50.0	11.1	85.7	0.0
WCHEN courses	9.4	56.3	0.0	50.0	10.0	50.0	33.3	33.3	0.0	87.5

Table VII-6. Extent of Support for Methods of Continuing Education As Reported by Physical Therapists

METHODS	REGION	IDAHO	MONTANA	NEVADA	WYOMING
	Combined % Avail.& Used, Not Avail. but Needed	Combined % Avail. & Used, Not Avail. but Needed	Combined % Avail. & Used, Not Avail. but Needed	Combined % Avail. & Used, Not Avail. but Needed	Combined % Avail. & Used, Not Avail. but Needed
Short-term training courses	70.6%	57.2%	77.3%	72.2%	70.4%
Workshops	75.7	71.5	63.7	87.6	85.7
Special classes on site	69.3	91.7	66.7	56.3	69.3
Educational films	60.9	78.6	45.5	50.1	83.3
Educational television	62.7	53.8	68.1	53.8	72.7
Educational radio	51.8	41.6	57.2	35.7	72.7
Professional journals and books	88.0	85.7	91.6	77.3	100.0
Programmed instruction	58.3	38.5	68.2	50.0	72.7
Conventions/meetings	81.4	84.6	92.0	61.1	85.7
WCHEN courses	65.7	50.0	60.0	66.6	87.5

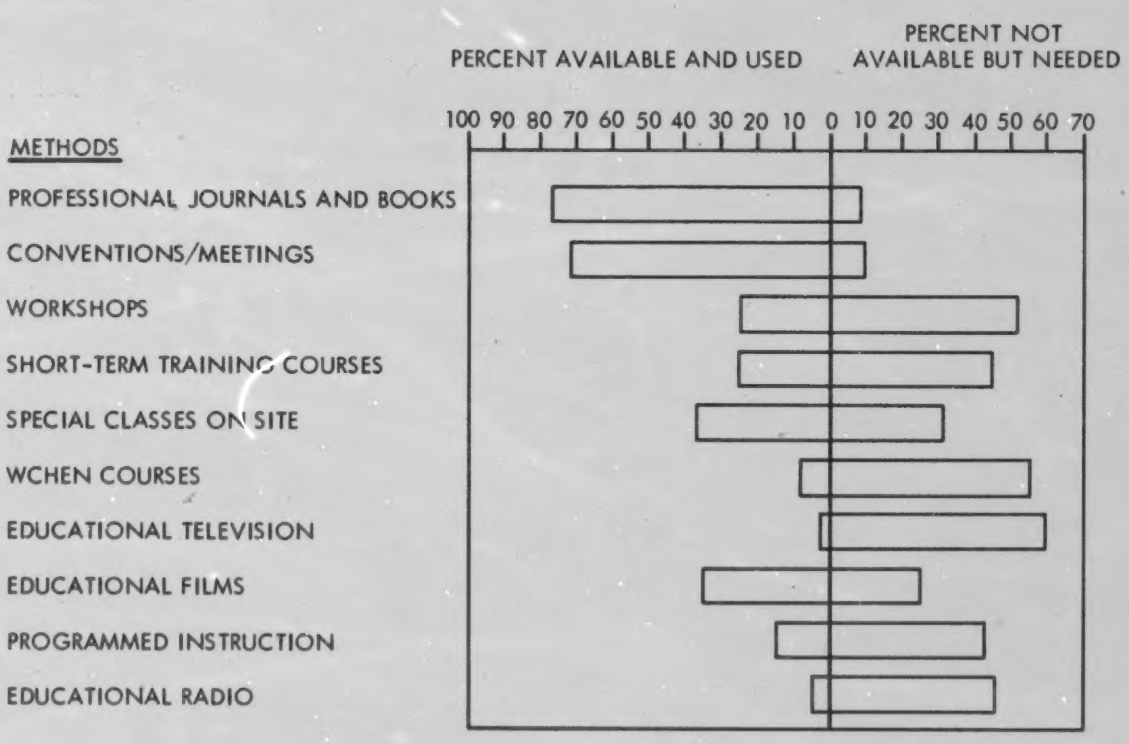

Figure VII-1. Ranking of Physical Therapists' Support for Methods of Continuing Education

Table VII-7. Needed Methods of Continuing Education According to Experience of Reporting Physical Therapists

METHODS	YEARS OF PRACTICE		
	(0 - 4)	(5 - 19)	(20 - over)
Short-term training courses	41.7%	48.9%	0.0%
Workshops	27.3	58.7	50.0
Special classes on site	22.2	37.2	20.0
Educational films	20.0	25.0	0.0
Educational television	55.6	61.9	25.0
Educational radio	55.6	48.8	25.0
Professional journals & books	0.0	10.0	14.3
Programmed instruction	40.0	53.6	0.0
Conventions/meetings	8.3	12.8	0.0
WCHEN courses	60.0	62.5	0.0

- PTs in the middle experience group (5 to 19 years of active practice) show the highest expression of need of all experience groups for all educational methods except educational radio.

- Three educational methods are among the top five for all experience groups:

  educational television

  workshops

  educational radio

2. Attendance at Courses

   a) Outside Local Community. As a means of further assessing both need and motivation for continuing education on the part of PTs throughout the Region, each was asked if he would attend short-term training courses in the prevention, treatment, and rehabilitation of heart, cancer, and stroke patients at a center outside his community, either at his own expense or if all expenses were paid for him. About half (50.8%) of the 61 PTs responding say that they would attend such courses outside of their community at their own expense. PTs in both Nevada and Wyoming exceed the regional "yes" response to this question and it can be assumed that they are more willing to attend short-term training outside of their community at their own expense than are the PTs in Montana and Idaho.

   Almost all of the 72 PTs responding (94.4%) say that they would attend short-term training outside of their community if their expenses were paid. The Idaho, Nevada, and Wyoming responses exceed the regional "yes" response in this area. Montana respondents were below the regional response in both their willingness to attend short-term training courses outside of their community at their own expense and to attend short-term training outside of their community with expenses paid.

   Those who say they would not attend even if their expenses are paid, also indicate that the primary inhibiting factor is "no one to replace me at work". Caution is required in this analysis, however, for there are only 5 respondents in all (4 of whom are in Montana).

   b) Within Local Community. When asked if they would take advantage of additional training in the prevention, treatment or rehabilitation of heart disease, stroke and cancer patients, if such training were made available to them in their own communities, every one of the

81 physical therapists throughout the Region responding did so in the affirmative

3. Desired Course Content

As a means of further specifying continuing education needs, the PTs were asked to indicate the nature of their interest in each of the illnesses of heart disease, cancer, and stroke in terms of: prevention of the disease, treatment of the disease, or rehabilitation of the patient. Respondents were allowed to select more than one service modality in relation to more than one disease, if they chose.

By and large, Mountain States physical therapists are primarily concerned with rehabilitation as an area for continuing education, and with stroke as the disease category in which such training is most desired. There are some minor variations from state to state and these are discussed briefly below.

- Most overall interest is expressed in Montana. Montana respondents express above the average regional interest in the prevention of heart disease and stroke, the treatment of heart disease, the treatment of stroke, and the rehabilitation of heart disease, cancer and stroke. Only in the prevention of cancer and in the treatment of cancer did the PTs in Montana express below the regional interest.
- Idaho's PT respondents express an interest that is below regional average interest in everything but the rehabilitation of stroke victims.
- In the rehabilitation of heart disease, Montana and Wyoming are above the average regional interest, and Idaho and Nevada are below it.
- In the rehabilitation of cancer patients, Idaho and Nevada again are below the average regional interest, and Montana and Wyoming above it.
- In the rehabilitation of stroke patients, Idaho and Montana are above the average regional interest, and Nevada and Wyoming respondents are below it.

E. OTHER FACTORS RELEVANT TO CONTINUING EDUCATION

1. Reasons for Working

For the Region as a whole, "sole support of family" ranked first as the main reason for working for 45.8% of the physical therapists.

This and other indicated reasons for working are listed below for the 83 therapists in the Region who responded to this question:

Rank	Reason	%
1	Sole support of family	45.8
2	Self-supporting	26.5
3	Supplement family income	16.9
4	Obtain "luxuries of life"	3.6
5	Support children in college	2.4
6	Other (no data)	--

Table VII-8 shows the response for each main reason for working in terms of the years of active practice of those responding. Examination of this table shows that the most frequently selected reason for working ("sole support of family") has proportionately more respondents in the 5 to 19 years of active practice category than in either the 0 to 4 or 20 and over years of active practice groups. Those who are self-supporting are more likely to be found in the upper or lower groups in terms of experience. Those who are working to supplement the family income are found proportionately more frequently in the longer experienced groups.

The top ranking reasons for working (sole support, self-support, and supplement family income) were also looked at according to the sex and marital status of those responding. 32 of the 38 indicating "sole support of family" as their main reason for working are male and married. In contrast, 12 of the 22 indicating they are "self-supporting", are female and single. Of the 14 indicating they work to "supplement the family income", 13 were female and married.

2. Techniques to Encourage Participation

In order to establish to some extent the degree of help afforded by various methods of easing the burden of continuing education, the PTs in the survey were asked to indicate which methods were "a great help," "some help," "little help," or "no help."

A majority (minimum of 52.6%) of the responding PTs of the Region indicate that all categories listed below would be of "great" or "some" help. No state or zone varies from this rating trend.

Table VII-8. Main Reason for Working According to Experience of Reporting Physical Therapists

MAIN REASON FOR WORKING	YEARS OF PRACTICE (0 - 4)	(5 - 19)	(20 - over)	(Total)
Self support	31.2%	25.9%	37.5%	28.2%
Sole support of family	43.7	48.1	25.0	44.8
Supplement family income	12.5	16.6	25.0	16.6
Provide children with college education	6.2	0.0	12.5	2.5
Desire to obtain luxuries	6.2	3.7	0.0	3.8
Need to pay off unexpected bills	0.0	0.0	0.0	0.0

The category rated by the highest percent of PTs (78.1%) as being helpful is "programs closer to home." The least helpful, but still with significant rating (52.6%), is "relief to substitute in my absence."

All the categories and response percentages for each are listed below:

- Payment of expenses (76.9%)
- Released time (no loss of salary) (74.6%)
- Relief to substitute in my absence (52.6%)
- Programs closer to home (78.1%)
- More complete information about existing programs (68.5%)
- Earlier notification of courses (55.4%)
- Other (too few cases to permit analysis)

Proportionately more PTs with 20 or more years of active practice rate these methods of great help than did those with 0 to 4 years of active practice or 5 to 19 years of active practice. PTs with 20 or more years of active practice exceed the average regional "great help" response in all 6 of the methods listed.

3. Frequency of Attendance

Frequency of attendance was another area probed for those physical therapists who say they would take special training if offered locally. The time interval most favored by those responding is "once a month" (43.8% of 80 responding). Other responses were: "every six months" (28.8%), and "once a year" (16.3%). These proportions are relatively uniform for all Mountain States PTs, regardless of state of residence.

F. HEALTH PROBLEM SUPPORT TO CONSUMER AND COMMUNITY

1. Consumer Health Problems

One of the recognized areas of importance in education is that related to patients and their families. In order to explore this area the PTs in the region were asked to rate the training and support of patient and family in terms of a four-point scale ranging from "excellent' to "poor" in relation to clinical conditions of patients. In analysis it was assumed that a combination of "excellent" and "good" ratings, compared with "fair" and "poor" ratings, would indicate the areas in which MS/RMP should place emphasis on required improvement. PT responses are found in Table VII-9 and are summarized below.

- Throughout the Region, PTs are about equally divided in expressing satisfaction or dissatisfaction with community education of patient and family in relation to all health problems.
- In only three problem areas (special dietary needs, paralysis, colostomy) do more than half the PTs give "good" or "excellent" ratings, and then by no more than 60%.
- The fewest PTs give "good" or "excellent" ratings to patient support and education for speech defects and bowel/bladder control.
- Idaho PTs rate all problem areas higher than do the PTs in any other state, a majority of them giving "good" or "excellent" ratings in each area.
- Wyoming PTs lead all the rest in expressing the lowest proportion of "good" or "excellent" ratings in all problem areas.

2. Community Procedures

In a further effort to determine the extent of satisfaction with procedures of information exchange in the community of practice, Region PTs were asked to comment on practices of information exchange in public education, among health agencies, and in departments where they practice. Their responses, as shown in Table VII-10, may be summarized as follows:

a) Information to the Public. Of the responding PTs, only 25% feel that the dissemination of information to the public concerning heart disease, cancer, and stroke is satisfactory. On a state basis, it appears that PTs in Nevada and Wyoming are a little more satisfied in this area than are those in Idaho and Montana.

b) Inter-Agency Exchange of Patient Data. Just over one-third (35.6%) of the Region PTs feel that current procedures concerning the exchange of patient data among health agencies are adequate. Nevada PTs showed considerably more satisfaction here than did those in the other states.

c) Interdepartmental Patient Data Exchange. Current procedures in this area are considered to be satisfactory by a sizeable majority (69.9%) of the Region's PTs. Idaho PTs express the highest proportion of satisfaction here.

Table VII-9. Quality of Teaching and Support Services
As Reported by Physical Therapists

Rank (Good and Excel.)	HEALTH PROBLEMS	REGION		IDAHO		MONTANA		NEVADA		WYOMING	
		Good and Excel.	Fair and Poor	Good and Excel.	Fair and Poor	Good and Excel.	Fair and Poor	Good and Excel.	Fair and Poor	Good and Excel.	Fair and Poor
3	Colostomy	52.8	47.2	75.0	25.0	50.0	50.0	71.4	28.6	36.4	63.6
4	Ileostomy	50.0	50.0	75.0	25.0	46.1	53.9	71.4	28.6	30.0	70.0
1	Special dietary needs	60.5	39.5	66.6	33.4	61.5	38.5	66.7	33.3	50.0	50.0
7	Amputations	44.6	55.4	64.3	35.7	36.4	63.6	50.0	50.0	30.8	69.2
9	Speech defects	32.2	67.8	63.6	36.4	35.0	65.0	13.4	86.6	23.0	77.0
2	Paralysis	55.2	44.8	78.6	21.4	65.3	34.7	50.0	50.0	16.6	83.4
8	Bowel/bladder incontinence	40.4	59.6	75.0	25.0	23.0	77.0	45.4	54.6	18.2	81.8
5	Tracheostomy	50.0	50.0	75.0	25.0	50.0	50.0	57.1	42.9	33.4	66.6
6	Limited physical activity	46.6	53.4	58.3	41.7	47.1	52.9	47.1	52.9	33.4	66.6

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Table VII-10. Satisfaction with Procedures as Reported by Physical Therapists

PROCEDURES	REGION	IDAHO	MONTANA	NEVADA	WYOMING
Dissemination of information to the public	25.0%	18.8%	25.0%	26.3%	30.8%
Exchange of patient information between health agencies	35.6	30.8	30.0	47.1	33.3
Exchange of patient information between departments	69.9	86.7	70.8	63.2	60.0

VIII. RADIOLOGIC/X-RAY TECHNOLOGIST

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A. INTRODUCTION

1. Sample Size and Distribution

Just about one half (49%) of the 581 radiologic and X-ray technologists (R/XT) contacted in the Mountain States responded to the MS/RMP questionnaire. Of these, 88 were not in active practice at the time of the survey and were eliminated from the sample for the purposes of this analysis. The overall response rate was highest in Montana (59.4%) and lowest in Nevada (23.7%). Table VIII-1 shows the response numbers and rates for the Region and for each of the states. It also shows how the actual sample was drawn by eliminating all inactive R/XTs, and how the resulting 197 R/XTs are distributed among the states. The analysis and findings described in this report are based on this sample and distribution.

Table VIII-1. Radiologic/X-ray Technologists

STATE	TOTAL CONTACTED		TOTAL RESPONSE		ACTUAL SAMPLE SIZE (2)	
	NUMBER OF CONTACTS	REGION PROPORTION (%)	NUMBER OF RESPONSES (1)	RESPONSE RATES (%)	NUMBER	REGIONAL PROPORTION (%)
IDAHO	191	32.9	106	55.5	75	38.1
MONTANA	175	30.1	104	59.4	66	33.5
NEVADA	118	20.3	28	23.7	18	9.5
WYOMING	97	16.7	47	46.4	38	19.3
REGION	581	100.0	285	100.0	197	100.0

(1) All responses to survey are included in this total.

(2) Only respondents in active practice at time of survey are included in this total.

2. Highlights of the Analysis

- The average Mountain States radiologic and X-ray technologist (R/XT) has had nearly 12 years of active practice.

- More than two-thirds of the R/XTs express the need for continuing education in all heart disease, cancer, and stroke clinical areas.

- R/XTs with fewer than 5 years of active practice are well above the regional average in expressing need for education in each area.

- More than half of the R/XTs indicate a desire for two methods of education they feel are not generally available to them:

  short-term training courses

  WCHEN courses

- More R/XTs are interested in training for prevention and treatment than for rehabilitation in the three disease categories.

- About 75% of the R/XTs would attend short-term training courses outside their local communities if their expenses were paid.

- Most R/XTs feel that holding training programs closer to home would be the greatest single stimulus to increased R/XT participation in continuing education, and more than 80% of them would attend short-term courses held in their own communities.

- Other incentives to participation in educational programs stressed by at least 70% of the R/XTs are:

  payment of expenses

  more information about existing programs

  released time with no loss of salary

- The teaching and support provided patients and their families in selected health problems is considered to be "good" or "excellent" by less than half of the R/XTs.

- One-half to two-thirds of the R/XTs consider "satisfactory" the dissemination of health information to the public and inter-agency and intra-facility exchange of patient data.

B. SELECTED PERSONAL AND PROFESSIONAL CHARACTERISTICS

In this section, a partial profile of the Mountain States radiologic/X-Ray technologist (R/XT) is drawn. The characteristics selected are those considered of particular relevance to the major problem areas examined analytically in subsequent sections.

1. Age

(a) Region. For the Region as a whole, the average age of the R/Xts is 36.1 years, and two-thirds of them are between 25 and 47 years of age. In general, state distributions follow closely the regional distribution, with a few exceptions as noted below.

(b) Idaho. The younger (34 years of age or under) R/XTs, (representing 34.4% of the 61 respondents) are concentrated in Zone 3, Zone 4, and Zone 6.

(c) Montana. There are proportionately more younger R/XTs in Montana than in any of the other three states (45% of 60 responding). Those 34 years of age or under are located mainly in Zone 1, Zone 2, Zone 3, and Zone 5.

(d) Nevada. In Nevada the younger R/XTs are located mainly in Zone 1 and Zone 6. For the state as a whole, 6 of the 16 responding (37.5%) are 34 years of age or under.

(e) Wyoming. Like Montana, Wyoming has a large number of younger R/XTs: 45% of the 60 responding are 34 years of age or under. They are concentrated primarily in Zone 4, Zone 5, and Zone 6.

2. Years of Active Practice

Regional and state distributions of Mountain States R/XTs in terms of years of active practice, as an index of relative experience, are given below.

(a) Region. The average Mountain States R/XT has been in practice for 11.5 years, and two-thirds of the 171 responding have been in practice between 3 and 19 years. Nearly half (49.7%) of those reporting have 9 or fewer years of active practice. This distribution is consistent among the states in the Region.

(b) States. Wyoming R/XTs report fewer years of active practice than do those in the other states. 18 of 32 Wyoming R/XTs (56.3%) have 9 or fewer years of active practice. Idaho is next with 51.6% (32 of 62 respondents) with 9 or fewer years of active practice, then Montana with 50% (30 of 60), and Nevada with a low of 29.4%.

Within the states, these less experienced technologists tend to be concentrated as follows:

- Idaho
  Zone 3 (14), Zone 4 (5), and Zone 6 (7).

- Montana
  Zone 1 (6), Zone 2 (10), Zone 3 (5), and Zone 5 (8).

- Nevada
  Zone 6 (3)

- Wyoming
  Zone 1 (4), Zone 4 (3), Zone 5 (4), and Zone 6 (5).

3. Membership in State or National Professional Organization

Mountain States R/XTs were asked to indicate whether or not they were members of a state or national professional organization.

(a) Region. 148 (80%) belong to a state or national professional organization, and 36 do not. In general, this proportion holds throughout the region for all four states, with minor variations described below.

(b) States. Leading the states is Nevada with 94.1% (16 or 17) of its R/XTs indicating membership in a state or national organization. Idaho is next with 83.6% (56 of 67), then Montana with 77.8% (49 of 63), and finally Wyoming with 73% (27 of 37). Within the states, membership is distributed quite evenly among the zones.

4. Nature of Clinical Practice

In order to obtain some indication of the relationship between expressed interest and concern for continuing education and the actual practical experience R/XTs were asked to indicate whether or not they encountered patients with specified heart disease, cancer, and stroke conditions in the course of their daily clinical practice.

One out of four R/XTs (25.4%) does not work in a clinical area. Of those who do, a substantial majority (three-fourths or more in all cases except stroke rehabilitation (52.5%), indicate they encounter patients in each of the clinical areas listed. The clinical areas and the R/XT responses for the Region and each state are included in Table VIII-2. Examination of this table shows that of all three disease categories (heart disease, cancer, stroke), only stroke is not represented among the five clinical areas most frequently mentioned by R/XTs as comprising a part of their clinical practice:

Table VIII-2. Clinical Conditions Observed in the Practice of Radiologic/X-Ray Technologists

REGION RANK	CLINICAL CONDITION	REGION	IDAHO	MONTANA	NEVADA	WYOMING
--	Do not work in clinical areas	25.4%	21.3%	27.3%	33.3%	26.3%
1	Congestive heart failure	95.9	97.6	89.3	100.0	100.0
14	Cardiac arrhythmias	84.1	77.1	80.0	88.9	100.0
6	Hypertensive cardiovascular disease	91.9	94.4	84.0	87.5	100.0
4	Myocardial infarction	94.2	94.4	87.5	100.0	100.0
5	Rheumatic heart disease	93.3	94.3	88.5	90.0	100.0
11	Rheumatic fever	86.9	93.8	75.0	77.8	94.7
9	Congenital heart defect	88.4	94.3	82.6	80.0	88.9
8	Cerebral vascular accident	90.6	97.2	73.9	100.0	94.1
13	Peripheral vascular disease	84.6	84.8	72.7	100.0	93.8
18	Stroke rehabilitation	52.5	59.3	53.3	42.9	41.7
2	Cancer of gastro-intestinal tract	95.9	94.9	96.9	88.9	100.0
3	Cancer of genito-urinary tract	94.8	94.7	93.8	88.9	100.0
17	Cancer of skin	73.8	80.0	69.6	75.0	64.3
7	Cancer of respiratory tract	91.5	92.1	89.3	100.0	88.9
16	Cancer of central nervous system	75.0	76.5	70.8	75.0	78.6
15	Cancer of oral cavity, head and neck	79.5	83.3	78.6	75.0	75.0
10	Cancer of breast	87.0	88.9	86.7	100.0	76.5
12	Lymphoma and leukemia	84.7	85.7	84.0	100.0	76.5

- Congestive heart failure
- Cancer of the gastro-intestinal tract
- Cancer of the genito-urinary tract
- Myocardial infarction
- Rheumatic heart disease

C. NEED FOR CONTINUING EDUCATION

Radiologic/X-ray technologists throughout the Region were requested to estimate their need for assistance in keeping abreast of changes in the care of patients suffering from any of 18 clinical conditions related to heart disease, cancer and stroke.

1. Expressed Need

Table VIII-3 shows how the Mountain States R/XTs rate the indicated clinical conditions in terms of strong or moderate need for education. The clinical conditions are listed in rank order of need. On a regional basis congestive heart failure received proportionately more strong and moderate need responses than other clinical conditions, and stroke rehabilitation received proportionately fewer strong and moderate need responses than others. Examination of the state rankings shows that:

- Idaho respondents indicate proportionately more strong and moderate need for help in keeping abreast in most of the areas listed than do those in the other states. In fact, Idaho is outranked in only 3 of the 18 clinical areas.
- Both Idaho and Wyoming respondents consistently express proportionately stronger needs than does the Region as a whole.
- Montana and Nevada respondents express consistently lower proportionate needs than does the Region as a whole.

2. Factors Affecting Need for Education

Table VIII-4 shows the percent of R/XTs in the Region who indicate a need for additional education in the several clinical condition areas in terms of the number of years of action practice of the R/XTs. This comparison is made to determine whether there are significant differences in expressed need for education which are related to the number of years of experience in the profession.

It is apparent from an examination of Table VIII-4 that the expression of need for education is high (above 60%) in all three experience groups for all but one clinical condition in one experience group (36.4% for stroke rehabilitation in the 20 and over years of experience group).

Table VIII-3. Need for Continuing Education in Clinical Conditions As Reported by Radiologic/X-Ray Technologists

REGION RANK	CLINICAL CONDITION	REGION	IDAHO	MONTANA	NEVADA	WYOMING
1	Congestive heart failure	84.2%	92.5%	72.0%	70.0%	90.0%
12	Cardiac arrhythmias	77.2	89.5	62.5	60.0	80.0
7	Hypertensive cardiovascular disease	81.3	94.7	65.4	72.7	80.9
6	Myocardial infarction	81.5	91.9	70.8	80.0	81.0
13	Rheumatic heart disease	77.2	88.9	68.0	50.0	81.0
17	Rheumatic fever	69.3	86.1	54.6	40.0	70.0
15	Congenital heart defect	74.5	86.5	65.2	50.0	75.0
2	Cerebral vascular accident	84.1	91.9	77.7	63.7	89.5
10	Peripheral vascular disease	77.8	86.1	70.8	60.0	80.0
18	Stroke rehabilitation	68.2	80.0	56.5	40.0	75.0
5	Cancer of gastro-intestinal tract	81.7	87.1	76.0	70.0	81.2
3	Cancer of genito-urinary tract	82.8	87.1	76.0	70.0	89.4
16	Cancer of skin	74.2	78.4	70.8	70.0	72.3
8	Cancer of respiratory tract	80.4	87.2	66.6	70.0	89.5
14	Cancer of central nervous system	76.1	84.2	65.2	60.0	80.9
11	Cancer of oral cavity, head and neck	77.4	87.1	65.2	60.0	80.9
9	Cancer of breast	80.0	85.0	75.0	60.0	85.7
4	Lymphoma and leukemia	82.5	89.2	76.9	70.0	83.4

Table VIII-4. Need for Continuing Education in Clinical Conditions According to Experience of Reporting Radiologic/X-Ray Technologists

CLINICAL CONDITION	YEARS OF PRACTICE (0 - 4)	(5 - 19)	(20 - over)
Congestive heart failure	92.8%	83.1%	72.7%
Cardiac arrhythmias	85.7	75.0	75.0
Hypertensive cardiovascular disease	86.7	80.0	72.7
Myocardial infarction	86.7	80.0	72.7
Rheumatic heart disease	93.3	71.7	72.7
Rheumatic fever	92.8	62.1	72.7
Congenital heart defect	92.8	70.0	72.7
Cerebral vascular accident	85.7	85.7	66.7
Peripheral vascular disease	85.7	77.6	66.7
Stroke rehabilitation	86.7	67.8	36.4
Cancer of gastro-intestinal tract	85.7	80.6	75.0
Cancer of genito-urinary tract	85.7	82.2	75.0
Cancer of skin	85.7	71.2	72.7
Cancer of respiratory tract	85.7	78.7	75.0
Cancer of central nervous system	87.5	73.3	72.7
Cancer of oral cavity, neck and head	87.5	73.3	75.0
Cancer of breast	93.8	77.4	66.7
Lymphoma and leukemia	85.7	83.3	72.7

- The group with the least experience (0 to 4 years) expresses the highest need of all groups for education in all clinical conditions (85% or higher).

- The 5 to 19 years of experience group shows a range of from 62.1% to 85.7%. R/XTs in this group express the lowest educational need of all groups in six clinical condition areas.

- The 20 and over years of experience group shows a range of from 36.4% to 75%. R/XTs in this group express the lowest overall need of education of all groups in 13 of the clinical condition areas.

D. DESIRED METHODS AND PROCEDURES OF CONTINUING EDUCATION

1. Preferred Educational Procedures

A number of continuing education programs are already available in the Region. The R/XTs were asked about the types of programs they knew to be available, which programs are used, and what programs are needed. Emphasis was placed on training programs dealing with heart disease, cancer, and stroke.

The data in Table VIII-5 show that even when continuing education methods are available they are not very extensively used by the R/XTs. With two exceptions (professional journals and books, and conventions/meetings) less than 40% of the responding R/XTs indicate that they take advantage of currently available programs. No state or zone variations are significantly different from this trend.

The data in Table VIII-5 further show responses with respect to educational methods that are needed but not available. The relative proportion of the two types of responses ("available and used" and "not available but needed") for each method is portrayed graphically in Figure VIII-1. These same data have also been combined in a manner to derive a single percentage for both responses which can serve as an index of relative support for each training method by Mountain States R/XTs. The results of this combination are shown in Table VIII-6. These figures should be examined together with the graphs in Figure VIII-1, in order to determine the relative weight given the index by each type of response.

For example, in Table VIII-6 the highest combined support is indicated for professional journals and books. However, Figure VIII-1 shows that almost all of this support comes from the "available and used" response. On the other hand, while short term training courses rank fourth in indicated support, most of this support is to be found in the "not available but needed" area where it ranks first. Distinctions such as these may be of considerable importance in determining where the need for new or expanded training programs actually is to be found.

Table VIII-5. Availability and Need for Methods of Continuing Education As Reported by Radiologic/X-Ray Technologists

METHODS	REGION		IDAHO		MONTANA		NEVADA		WYOMING	
	% Avail. and Used	% Not Avail. but Needed	% Avail. and Used	% Not Avail. but Needed	% Avail. and Used	% Not Avail. but Needed	% Avail. and Used	% Not Avail. but Needed	% Avail. and Used	% Not Avail. but Needed
Short-term training courses	13.0	57.6	8.3	69.4	19.2	38.5	40.0	30.0	0.0	75.0
Workshops	26.5	44.9	41.7	38.9	18.8	46.9	40.0	40.0	5.0	55.0
Special classes on site	22.3	41.5	30.8	35.9	16.0	36.0	18.2	54.5	15.8	52.6
Educational films	39.2	28.4	51.2	31.7	34.5	27.6	18.2	34.6	33.3	19.0
Educational television	11.0	42.9	15.8	39.5	4.2	33.3	0.0	70.0	15.8	47.4
Educational radio	8.1	37.2	5.6	36.1	0.0	31.8	0.0	62.5	25.0	35.0
Professional journals and books	72.2	8.3	68.9	11.1	80.0	6.5	80.0	0.0	63.6	9.1
Programmed instruction	12.4	46.1	11.1	50.0	8.0	48.0	50.0	12.5	5.0	50.0
Conventions/ meetings	66.0	8.0	64.3	0.0	75.0	3.6	55.6	22.2	61.9	23.8
WCHEN courses	6.4	51.1	5.6	50.0	0.0	33.3	16.7	50.0	7.1	64.3

Table VIII-6. Extent of Support for Methods of Continuing Education As Reported by Radiologic/X-Ray Technologists

METHODS	REGION	IDAHO	MONTANA	NEVADA	WYOMING
	Combined % Avail.& Used, Not Avail. but Needed	Combined % Avail.& Used, Not Avail. but Needed	Combined % Avail.& Used, Not Avail. but Needed	Combined % Avail.& Used Not Avail. but Needed	Combined % Avail.& Used, Not Avail. but Needed
Short-term training courses	70.6%	77.7%	57.7%	70.0%	75.0%
Workshops	71.4	80.6	64.7	80.0	60.0
Special classes on site	63.8	66.7	52.0	72.7	68.4
Educational films	67.6	82.9	62.1	52.8	52.3
Educational television	53.9	55.3	37.5	70.0	62.2
Educational radio	45.3	31.7	31.8	62.5	60.0
Professional journals and books	80.5	70.0	86.5	80.0	72.7
Programmed instruction	58.5	61.1	56.0	62.5	55.0
Conventions/meetings	74.0	64.3	78.6	77.7	85.7
WCHEN courses	57.5	55.6	33.3	67.7	71.4

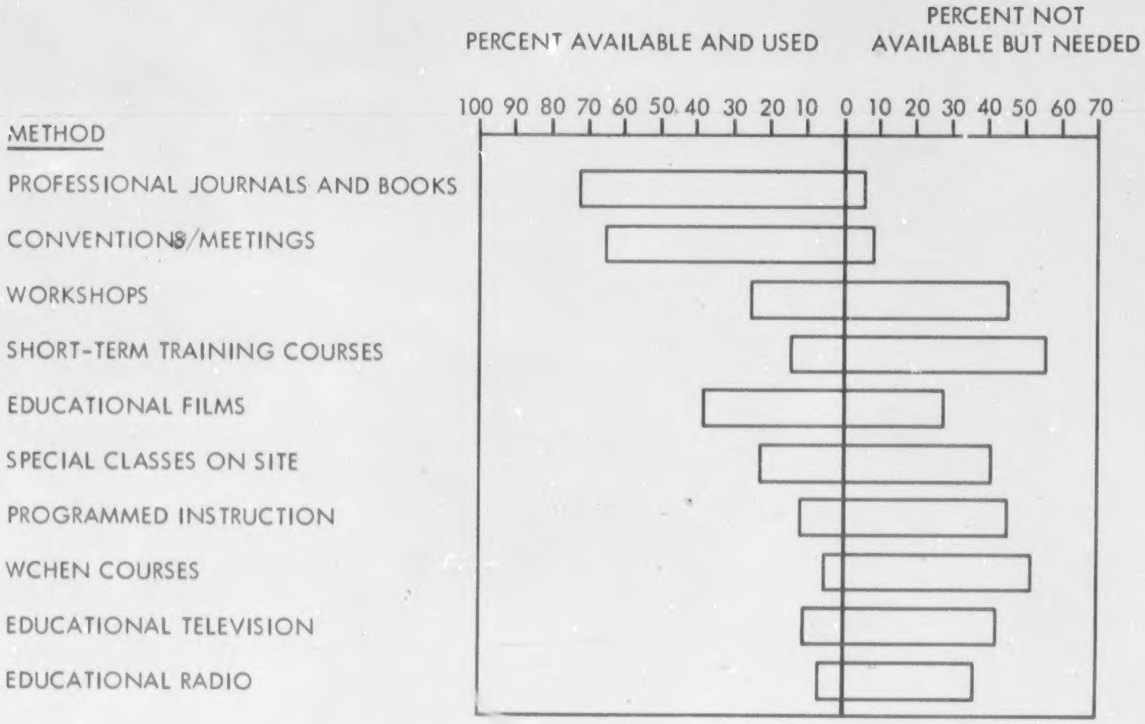

Figure VIII-1. Ranking of Radiologic/X-Ray Technologists' Support for Methods of Continuing Education

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These same data have also been looked at in an effort to ascertain whether or not any variation owing to years spent in practice is reflected in the responses. Examination of these data (Table VIII-7) shows that there are some observable and consistent differences in educational method preferences among nurses with varying degrees of experience.

- Conventions/meetings, and professional journals and books are considered to be the least needed educational methods by all R/XTs, regardless of length of practice.
- Most R/XTs in each experience group express the need for the same type of educational method: short-term training courses.
- Two other educational methods are among the top five for all experience groups:

WCHEN courses
educational television

2. Attendance at Courses

a) Outside Local Community. As a means of further assessing both need and motivation for continuing education on the part of R/XTs throughout the Region, each was asked if he would attend short-term training courses in the prevention, treatment and rehabilitation of heart, cancer and stroke patients at a center outside his local community, either at his own expense or if all expenses were paid. More R/XTs would attend such training with "expenses paid" (75% of the 120 responding) than would attend "at own expense" (24.5% of the 102 responding). Those who say they would not attend even if expenses were paid, also indicate that the primary inhibiting factors are, "family responsibilities" (34.8% of all responses) and "no one to replace me at work" (30.2% of all responses).

There are no major differences among the states with regard to responses in this area.

b) Within Local Community. The situation described above changes considerably when the R/XTs are asked if they would take advantage of additional training for the prevention, treatment, or rehabilitation of heart disease, cancer and stroke patients, if such training were made available to them in their own communities. Under such circumstances, 83.1% (113 of the 136 responding) indicate that they would attend additional training of this kind if offered in their communities. There are no gross differences among states in this response.

Table VIII-7. Needed Methods of Continuing Education According to Experience of Reporting Radiologic/X-Ray Technologists

METHODS	YEARS OF PRACTICE		
	(0 - 4)	(5 - 19)	(20 - over)
Short-term training courses	62.5%	55.7%	60.0%
Workshops	37.5	45.4	40.0
Special classes on site	38.9	43.3	40.0
Educational films	33.3	29.7	27.3
Educational television	52.6	40.4	44.4
Educational radio	42.1	38.2	42.8
Professional journals & books	4.8	9.1	7.1
Programmed instruction	58.8	44.8	33.3
Conventions/meetings	5.0	6.4	20.0
WCHEN courses	62.5	44.8	42.8

3. Desired Course Content

As a means of further specifying continuing education needs, the R/XTs were asked to indicate the nature of their interest in each of the illnesses of heart disease, cancer, and stroke in terms of: prevention of the disease, treatment of the disease, or rehabilitation of the patient. Respondents were allowed to select more than one service modality in relation to more than one disease, if they chose.

(a) Prevention

- More R/XTs express the need for additional training in preventive technique for cancer (41.1%) than for heart disease (33.9%) or stroke (25.0%).

(b) Treatment

- Here, too, more R/XTs are interested in training for the treatment of cancer (39.2%) than for the treatment of heart disease (35.1%) or stroke (25.7%).

(c) Rehabilitation

- Proportionately fewer R/XTs are interested in additional training for patient rehabilitation in any of the three disease categories.

- Of the R/XTs who are interested, the highest interest is in the area of stroke rehabilitation (39.0%).

(d) Combined Interests

- Of all R/XTs indicating preferences in the training areas for all diseases, the area most frequently selected is prevention (39.5%) and the disease category most emphasized is cancer (37.9%).

- For all diseases, least training interest is shown for rehabilitation (23.0%), and for all training areas R/XTs show the least interest in stroke (28.5%).

E. OTHER FACTORS RELEVANT TO CONTINUING EDUCATION

1. Reasons for Working

For the Region as a whole, "sole support of family" ranks first as the main reason for working for 34.6% of the R/XTs responding. This and other indicated reasons for working are listed below in rank order for the 182 radiologic/X-ray technologists in the Region who responded to this question:

Rank	Reason	Percent
1.	Sole support of family.	34.6
2.	Supplement family income.	25.8
3.	Self-supporting.	22.5
4.	Obtain "luxuries of life."	2.7
5.	Support children in college.	2.2
6.	Pay unexpected bills.	1.1
7.	Other (no data).	-

Table VIII-8 shows the response for each "main reason for working" in terms of the years of active practice of those responding. Examination of this table shows that the most frequently selected reason for working ("sole support of family"), has proportionately more respondents in the 5 to 19 and 20 and over years of active practice categories than does the 0 to 4 years of active practice group. Those who are working primarily to supplement family income are more likely to be in the 5 to 19 years of active practice group than in either of the others. Those who are self-supporting are most likely to be in the 0 to 4 years of active practice category.

The top ranking reasons for working (sole support, supplement family income, and self-supporting) were also looked at according to the sex and marital status of the respondent. 57 of the 63 indicating "sole support" as their main reason for working are male and married. In contrast, 44 of the 47 indicating "supplement family income" as their main reason for working are female and married. Of the 41 indicating "self-support" as their main reason for working, 21 are female and single; only 6 are male and single.

2. Techniques to Encourage Participation

In order to establish to some extent the degree of help afforded by various methods of easing the burden of continuing education, the R/XTs in the survey were asked to indicate which methods were "a great help," "some help," "little help," or "no help."

A majority of the responding R/STs of the Region indicate that all but one of the selected methods would be of "great" or "some" help. No state or zone varies from this rating trend.

Table VIII-8. Main Reason for Working According to Experience of Reporting Radiologic/X-Ray Technologists

MAIN REASON FOR WORKING	YEARS OF PRACTICE (0 - 4)	(4 - 19)	(20 - over)	(Total)
Self support	29.0%	21.8%	23.0%	23.3%
Sole support of family	22.5	35.4	42.3	34.1
Supplement family income	22.5	31.8	7.6	26.3
Provide children with college education	0.0	2.7	3.8	2.3
Desire to obtain luxuries	3.2	2.7	3.8	2.9
Need to pay off unexpected bills	3.2	0.9	0.0	1.1

The category rated by the highest percent of R/XTs (75.8%) as being helpful is "programs closer to home." The least helpful, but still selected by nearly half (46.7%), is "earlier notification of courses."

All the categories and response percentages for each are listed below:

- Payment of expenses (74.8%)
- Released time (no loss of salary) (71.2%)
- Relief to substitute in my absence (51.5%)
- Programs closer to home (75.8%)
- More complete information about existing programs (71.7%)
- Earlier notification of courses (46.7%)
- Other (too few cases to permit analysis)

Proportionately more R/XTs in the 5 to 19 years of active practice and the 20 and over years of active practice groups rate all techniques as of great help than do those in the 0 to 4 years of active practice category. The most helpful method (programs closer to home) is felt to be of great help to a greater proportion of technologists with 20 and over years of active practice than to those in either of the other experience groups. Payment of expenses is felt to be of great help by proportionately more in the middle category (5 to 19 years of active practice). Those in this group, together with those in the 20 and over years of active practice group, also tend to rate more information about existing programs as being of "great help" than do those in the 0 to 4 year group.

3. Frequency of attendance

Frequency of attendance was another area probed for those R/XTs who say they would take special training if offered locally. The most common time interval mentioned, regardless of interest area or residence, is "once a month" (54.1% of all respondents). The other most popular time intervals are favored by less than half of those preferring monthly training: "once a year" (21.6%) and "every six months" (18.0%).

F. HEALTH PROBLEM SUPPORT TO CONSUMER AND COMMUNITY

1. Consumer Health Problems

One of the recognized areas of importance in education is that related to patients and their families. In order to explore this area the R/XTs in the region were asked to rate the training and support of patient and family in terms of a four-point scale ranging from "excellent" to "poor" in relation to clinical conditions of patients. In analysis it was assumed that a combination of "excellent" and "good" ratings, compared with "fair" and "poor" ratings, would indicate the areas in which MS/RMP should place emphasis on required improvement. R/XT responses are found in Table VIII-9, and are summarized below.

- Throughout the Region, R/XTs express considerable dissatisfaction with community education of patient and family in relation to all health problems.

- In no problem area does a majority of R/XTs give a "good" or "excellent" response. The highest rating is for amputations (49.3%) and the lowest rating is given to the bowel and bladder control area.

- The states generally show ratings that are consistent with those for the Region, although some variation does occur: Wyoming leads all the states in expressing the lowest proportion of "good" or "excellent" responses for all but one problem area (Idaho is lower for ileostomy); Nevada leads all the states in expressing the highest proportion of "good" or "excellent" responses for all problem areas.

2. Community Procedures

In a further effort to determine the extent of satisfaction with procedures of information exchange in the community of practice, Region R/XTs were asked to comment on practices of information exchange in public education, among health agencies, and in departments where they practice. Their responses, as shown in Table VIII-10, may be summarized as follows:

a) Information to the public. Of the responding R/XTs, more than half (52.1%) feel that the dissemination of information to the public concerning heart disease, cancer, and stroke is satisfactory. Nevada R/XTs display the greatest satisfaction with procedures in this area, Wyoming R/XTs by far the least (38.1%).

b) Inter-agency exchange of patient data. Over half (55.1% of the Region R/XTs feel that current procedures concerning the exchange of patient data among health agencies are adequate. In this case, Nevada R/XTs are lowest (47.1%) while Wyoming R/XTs are above the Region average with 57.1% "satisfactory" responses.

c) Interdepartmental patient data exchange. Current procedures in this area are considered to be satisfactory by more than two-thirds (68.5%) of the Region R/XTs. Wyoming R/XTs express the highest proportion of satisfaction here (86.4%), while Idaho R/XTs are low with 60.5%.

Table VIII-9. Quality of Teaching and Support Services As Reported by Radiologic/X-Ray Technologists

Rank (Good and Excel.)	HEALTH PROBLEMS	REGION		IDAHO		MONTANA		NEVADA		WYOMING	
		Good and Excel.	Fair and Poor	Good and Excel.	Fair and Poor	Good and Excel.	Fair and Poor	Good and Excel.	Fair and Poor	Good and Excel.	Fair and Poor
3	Colostomy	44.7	55.3	40.0	60.0	58.9	41.1	57.1	42.9	35.3	64.7
6	Ileostomy	43.0	57.0	38.4	62.6	49.9	50.1	57.1	42.9	41.2	58.8
4	Special dietary needs	44.6	55.4	45.4	54.6	50.0	50.0	57.1	42.9	33.4	66.6
1	Amputations	49.3	50.7	42.9	57.1	58.9	41.1	85.7	14.3	38.9	61.1
2	Speech defects	46.2	53.8	41.1	58.9	47.3	52.7	100.0	0.0	33.4	66.6
7	Paralysis	40.2	59.8	47.2	53.8	41.2	58.8	71.4	28.6	11.8	88.2
9	Bowel/bladder incontinence	33.8	66.2	33.3	66.7	35.7	64.3	57.1	42.9	23.5	76.5
8	Tracheostomy	40.0	60.0	34.4	65.6	66.7	33.3	66.7	33.3	17.6	82.4
5	Limited physical activity	43.3	56.7	43.8	56.2	53.0	47.0	57.1	42.9	27.8	72.2

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Table VIII-10. Satisfaction with Procedures As Reported by Radiologic/X-Ray Technologists

PROCEDURES	REGION	IDAHO	MONTANA	NEVADA	WYOMING
Dissemination of information to the public	52.1%	62.2%	42.3%	66.7%	38.1%
Exchange of patient information between health agencies	55.1	61.5	50.0	41.7	57.1
Exchange of patient information between departments	68.5	60.5	67.7	66.7	86.4

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PART FOUR

REFERRAL OF PATIENTS: PATTERNS AND PRACTICES

PART FOUR

REFERRAL OF PATIENTS: PATTERNS AND PRACTICES

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Introduction

The referral of patients to other physicians, specialists, clinics, or medical centers is a not uncommon medical practice. It may take place for any of a number of clinical conditions and may be motivated by any of a number of reasons, including the physician's recognition of the inadequacy of the facilities and support available to him in carrying out the functions of diagnosis, treatment, or rehabilitation. In short, the frequency of recourse to referrals for any or all of these functions may very well serve as a guide to the identification of localities where assistance is needed in the provision of personnel, skills, and facilities that will minimize the need for practitioners to resort to large scale referral of patients outside the local community. Also of interest is the identification of localized referral patterns in terms of the particular localities to which patients are most commonly referred.

The MS/RMP survey instrument was not sufficiently refined to allow definitive probing into all the many subtleties and nuances that are to be found in the complex practice of referral. Thus, analysis in this area must be considered more suggestive than definitive. However, by pointing out the relative magnitude of the practice throughout the Region, and by identifying some of the physician and locality factors that appear to be associated with it, it should be possible to specify not only locations of apparent immediate need but also particular factors associated with the practice requiring further investigation and information before effective remedial programs can be designed and implemented.

In this section the referral practices of the Mountain States physicians and dentists, as reported by them in their responses to the MS/RMP survey, are examined in terms of the frequency and distribution of occurrence within the Region and within each of the states. The resulting frequency distributions are then analyzed in terms of their relationship to selected characteristics of the referring practitioners, including their expressed need for continuing education and/or special on-site consulting services. Finally, the identified referral practices are looked at from the standpoint of whether the referrals are made to sources within the local community or to outside sources and, if the latter, whether or not any clear pattern can be identified between the localities from which and to which the referrals are made.

I. PHYSICIAN

A. FREQUENCIES AND LOCATIONS OF PATIENT REFERRALS

It should be emphasized that the MS/RMP survey did not attempt to ascertain all the possible clinical conditions that might lead a physician to refer a patient elsewhere for diagnosis, treatment, or rehabilitation. Emphasis in the survey, as in the Regional Medical Program itself, was placed on the three "killer" diseases: heart disease, cancer, and stroke. Thus, the questions asked of Mountain States physicians concerning referrals were specific to these three diseases. In view of this, any patterns or trends in patient referral practices that emerge from analysis of the survey data must be considered to be applicable only to referrals made in these areas. The survey data provide no basis for generalizing such patterns to any other disease conditions. With regard to the specified diseases, however, a check list of possible reasons for or areas of referral was given, making it possible to enumerate, for each disease, the frequency of physician referral for any one or more of seven patient management areas:

- acute care
- diagnostic studies
- surgical management
- chronic care
- rehabilitation
- radiation therapy (cancer only)
- chemotherapy (cancer only)

1. Referral Frequencies and Distributions

Table (4)-I-1 shows the total number of physicians who indicate that they refer patients for each of the seven reasons in each disease category, in terms of the total number of physicians who responded to the survey questionnaire. Examination of this table shows that the referral rate for Mountain States physicians ranges from 40% for acute care for stroke (419 of 998), to 70% for radiotherapy (691 of 998). Other pertinent observations follow:

Table (4)-I-1. Frequency of Patient Referrals As Reported by Physicians

REASON FOR REFERRAL	REGION	IDAHO	MONTANA	NEVADA	WYOMING
Heart Disease					
Acute care	485	155	165	77	88
Diagnostic studies	672	203	242	93	134
Surgical management	662	209	240	84	129
Chronic care	448	143	153	71	81
Rehabilitation	466	143	160	70	93
Cancer					
Acute care	525	152	188	81	104
Diagnostic studies	586	178	209	88	111
Surgical management	614	184	220	90	120
Chronic care	439	135	148	74	82
Rehabilitation	431	130	146	74	81
Radiation therapy	691	204	255	99	133
Chemotherapy	541	164	191	82	104
Stroke					
Acute care	419	127	144	71	77
Diagnostic studies	514	155	171	80	108
Surgical management	521	156	181	78	106
Chronic care	424	126	147	67	84
Rehabilitation	476	141	162	73	100
Total Respondents	998	302	361	142	193

- The highest proportion of patient referrals, for all reasons that are applicable, is for heart disease (44% to 67%) and and for cancer (43% to 69%).

- The lowest proportion of patient referrals, for all reasons that are applicable, is for stroke (41% to 52%).

- The most common reasons for making referrals (whether associated with heart disease, cancer, or stroke) are for diagnostic studies and surgical management.

- Less than half, but more than 40%, of the Mountain States physicians refer patients for acute care, for chronic care, and for rehabilitation services associated with heart disease, cancer, and stroke.

- The highest proportion (691 of 998) of referrals is made for radiation therapy of cancer patients (not applicable to heart disease or stroke).

2. Where Referrals Are Made

Table (4)-I-2 shows the number and the percentage of physicians who indicate referrals are made within the local community. The percentage of physicians who refer patients outside the local community can be deduced (by subtracting the given percentages from 100%). An examination of Table (4)-I-2 against the background of the data in Table (4)-I-1 reveals the following:

- Diagnostic studies and surgical management, which rank highest in the proportion of total referrals made, rank lowest in the proportion of referrals made within the local community.

- Physicians in Nevada tend to make referrals within the local community to a much greater extent than do physicians in any other state.

- Physicians in Wyoming tend to make relatively few referrals within the local community.

Table (4)-I-2 also shows the actual number of physicians in each of the zones in each of the states who make referrals within the local community. Sometimes this number is italicized. If it is italicized, it means that the proportion of physicians in the zone who make referrals within the local community is higher than the state average. Thus, some pattern can be seen by looking at the italicized numbers for each

Table(4)-I-2. Referrals for Heart, Cancer, and Stroke Conditions Made Within the Local Community, According to Study Zone, As Reported by Physicians

REASON FOR REFERRAL		IDAHO								MONTANA						NEVADA							WYOMING						
			Zone								Zone						Zone							Zone					
	Region Average	State Average	1	2	3	4	5	6	7	State Average	1	2	3	4	5	State Average	1	2	3	4	5	6	State Average	1	2	3	4	5	6
Heart																													
Acute care	85.4%	86.5%	8	15	*75*	*11*	12	12	1	86.7%	27	32	*36*	*14*	*34*	92.2%	23	0	*3*	0	0	*45*	75.0%	3	2	6	*14*	4	*37*
Chronic care	82.8	83.2	8	12	*63*	10	*14*	12	0	85.6	27	*28*	*34*	10	*32*	87.3	19	0	*3*	0	0	*40*	72.8	3	*5*	4	*11*	6	*30*
Rehabilitation	72.1	76.9	6	9	*63*	9	12	11	0	71.3	24	*21*	*31*	7	*31*	87.1	16	0	*3*	0	0	*42*	54.8	3	2	2	*13*	6	*25*
Diagnostic studies	49.6	52.2	5	10	*60*	9	10	11	1	44.6	24	20	*31*	7	*26*	66.7	20	0	*3*	0	0	*39*	42.5	2	1	4	*16*	2	*32*
Surgical management	35.0	38.8	2	6	*53*	8	5	7	0	31.3	14	9	*27*	5	*20*	51.2	11	0	1	0	0	*31*	25.6	2	0	2	*8*	0	*21*
Stroke																													
Acute care	90.2	91.3	*6*	*14*	*67*	9	11	8	1	88.9	27	*28*	*35*	9	*29*	97.2	25	0	*1*	0	0	*40*	84.4	6	3	5	*12*	4	*35*
Chronic care	82.3	84.9	*7*	11	*63*	7	10	8	1	82.3	25	*23*	31	10	*32*	92.5	*20*	0	*4*	0	0	*38*	70.2	*5*	*5*	3	*10*	5	*31*
Rehabilitation	68.5	70.9	6	*12*	*59*	6	*10*	6	1	69.8	24	*23*	*31*	6	*29*	84.9	18	0	2	0	0	*42*	51.0	4	2	2	*11*	4	*28*
Diagnostic studies	67.7	69.0	5	8	*63*	10	11	*10*	0	63.7	23	16	*37*	5	*28*	86.3	*26*	0	1	0	0	*42*	58.3	4	3	3	*17*	2	*34*
Surgical management	53.9	52.6	0	2	*57*	7	8	*8*	0	49.2	17	8	*37*	2	*25*	82.1	*22*	0	1	0	0	*41*	43.4	1	0	2	*18*	1	*24*
Cancer																													
Chronic care	77.9	78.5	4	10	*62*	9	11	9	1	80.4	24	20	*32*	10	*33*	86.5	20	0	*3*	0	0	*41*	64.6	3	2	4	*9*	4	*31*
Rehabilitation	71.7	74.6	3	8	*58*	7	*11*	9	1	70.5	19	*18*	*32*	5	*29*	83.8	21	0	*3*	0	0	*38*	58.0	1	2	4	*10*	3	*27*
Acute care	66.5	73.0	5	11	*63*	9	13	9	1	63.3	27	19	*32*	8	*33*	80.2	*25*	0	*3*	0	0	*37*	51.9	2	2	5	*11*	1	*33*
Diagnostic studies	58.9	60.1	4	9	*64*	9	11	9	1	57.4	27	*21*	*34*	9	*29*	76.1	*26*	0	2	0	0	*39*	45.9	2	0	5	*13*	1	*30*
Surgical management	57.3	59.2	4	10	*63*	11	10	*11*	0	54.1	27	*21*	*37*	6	28	75.6	24	0	2	0	0	*42*	46.7	1	2	6	*13*	2	*32*
Chemotherapy	56.0	53.7	4	8	*57*	7	8	4	0	57.1	27	18	*34*	5	*25*	72.0	18	0	2	0	0	*39*	45.2	3	2	4	*11*	2	*25*
Radiation therapy	48.2	44.6	0	6	*64*	6	7	*8*	0	50.2	26	*29*	*42*	1	*30*	62.6	16	0	0	0	0	*46*	39.1	3	*7*	2	*17*	1	*22*

NOTE: Italics indicate a proportion of responses higher than the state average.

of the zones for each of the reasons for referrals. It is clear, for example, that in some zones a higher than average proportion of local referrals are made for most, if not all, of the reasons. For other zones no numbers are italicized; that zone is always below state average. If, for each zone, a number is italicized nine or more times, that zone may be presumed to represent a consistently higher proportion of referrals than the state average. If, a zone is italicized relatively few times, that zone may be presumed to represent a consistently lower proportion of referrals than state average. This is the pattern:

Proportion of Physicians Making
Local Referrals by Zone Within
Each State

Referrals With Respect to State Average	Idaho Zone	Montana Zone	Nevada Zone	Wyoming Zone
More	3	2,3,5	3,6	4,6
Fewer	1,2,4, 5,6,7	1,4	1,2,4,5	1,2,3,5

The discussion thus far can be summarized by stating that there is substantial variation in referral practices among the physicians in the Mountain States in several dimensions:

- the seven patient management areas
- the specific disease categories (heart disease, cancer, stroke)
- among physicians in each of the four states in the Region
- among physicians in the several zones in each state
- as to whether a referral is made at all

Finally, it should also be noted that, despite the variable pattern drawn above, there are also indications of consistency. For example, 614 of 998 physicians in the Mountain States refer patients for the surgical management of cancer. Of these, 57.3% are referred within the local community. State proportions are : Idaho, 59.2%; Montana, 54.1%; Nevada, 75.6%; Wyoming, 46.7%.

The indication here is that only one out of four physicians in Nevada makes referrals for the surgical management of cancer outside the local community; in contrast, more than half the physicians in Wyoming do this. To pursue this sample example down to the zone level, it can be seen that 42 physicians in Nevada, Zone 6, make referrals for the surgical management of cancer within the local community. Since this is a higher proportion than that for the state (75.6%), it indicates that in Zone 6, very few referrals are made outside the local community for the surgical management of cancer. Moreover, in this same Nevada zone, the proportion is higher than the state average in every case where referrals are made; that is, a higher proportion of referrals in Nevada, Zone 6, than for the state as a whole is made within the local community.

B. SELECTED CHARACTERISTICS OF PHYSICIANS MAKING REFERRALS

In this section two other aspects that relate to the complex of referral patterns will be examined: the experience (years of active practice) of the physician who makes the referral, and the referral practices of those physicians who consider their practice to be general compared to referral practices of those who consider their practice to be specialized.

1. Years of Active Practice and Referrals

In Table (4)-I-3 data are given for the Region as a whole and for each of the states that relate frequency of referral to the experience of the referring physicians in terms of the number of years they have been in active practice. For each of the three experience groups (0 to 9, 10 to 29, and 30 and over years of active practice), Region and state frequencies are given for referrals for each reason in each disease category. In addition, the Region frequencies have been converted to percentages in each experience group for each referral reason to facilitate comparison and interpretation. It is to be noted that the data in this table refer only to referrals made by physicians within the local community. However, a regional approximation of the extent of referral outside the local community, by reason and by experience group, can be obtained through the process of subtracting the percent shown for the Region from 100%.

For those physicians who do make referrals within the local community, it is possible to discern some definite indications of a pattern in this practice from a close examination of the distributions recorded in Table (4)-I-3. While the data do not permit detailed delineation of all attributes of this pattern, some of the broader segments can be identified and are discussed briefly below, together with some of the problems in interpretation that tend to make difficult trend or pattern development.

Table(4)-I-3. Frequency of Patient Referrals Made Within the Local Community According to Experience of Reporting Physicians

REASONS FOR REFERRAL	YEARS OF ACTIVE PRACTICE (0-9)					(10-29)					(30-over)				
	Region	I	M	N	W	Region	I	M	N	W	Region	I	M	N	W
Heart															
Acute care	104=85.2%	32	37	19	16	236=87.1%	77	82	42	35	66=80.5%	24	24	6	12
Diagnostic studies	79=43.5	23	28	14	12	190=49.7	60	62	39	29	59=59.6	22	18	6	13
Surgical management	54=30.9	18	18	11	1	136=36.1	44	45	26	16	31=32.0	14	3	5	9
Chronic care	89=80.2	29	33	15	12	217=83.1	69	17	37	34	56=84.8	19	21	6	10
Rehabilitation	80=70.8	26	27	16	11	195=71.2	64	68	35	28	53=75.7	18	19	6	10
Stroke															
Acute care	93=91.2	27	33	19	14	216=89.6	68	14	39	35	62=92.5	20	21	7	14
Diagnostic studies	86=64.7	24	28	20	14	200=68.0	63	64	39	34	55=72.4	19	17	6	13
Surgical management	74=54.8	19	24	18	13	159=53.0	47	51	38	23	44=57.1	16	14	4	10
Chronic care	89=85.6	27	33	16	13	195=81.3	59	69	37	30	58=82.9	20	19	5	14
Rehabilitation	81=65.9	23	30	17	11	189=69.0	60	65	37	27	51=73.9	16	18	5	12
Cancer															
Acute care	94=70.7	27	32	20	15	197=65.0	62	68	39	28	49=63.6	19	19	2	9
Diagnostic studies	91=59.1	24	33	20	14	200=59.7	65	69	40	26	46=54.1	16	18	3	9
Surgical management	93=56.4	27	32	20	14	205=58.7	64	68	43	30	45=51.7	15	18	2	10
Chronic care	89=78.1	26	33	18	12	193=78.5	67	67	39	26	53=77.9	18	19	3	13
Rehabilitation	76=72.4	22	29	14	11	182=72.5	58	58	40	26	46=68.7	16	16	5	9
Radiation therapy	74=41.6	16	33	17	8	200=50.0	58	76	37	29	54=54.5	16	19	6	13
Chemotherapy	70=49.6	19	23	18	10	176=56.8	49	69	34	24	51=63.8	19	17	4	11

In the first place, it should be noted that, in general, about 25% of all physicians who make referrals have fewer than ten years of active practice. Close to 60% of those who make referrals have been in active practice from 10 to 30 years. The remaining physicians who make referrals have been in practice 30 years or more. This distribution is about that for all physicians in the Mountain States Region whether they make referrals or not.

The revealing observation, indeed the purpose of developing the data in this way, is to contrast the referral practice of physicians with less experience and those with more experience. While differences can be noted, the pattern of these differences is not clear.

For example (in Table (4)-I-3), a much lower proportion of physicians with fewer than ten years of experience (43.5%, or 77 out of 177) refer patients within the local community for diagnostic studies associated with heart conditions than do those with 30 or more years of experience, (59.6% or 59 of 99). Other examples are less extreme: 65.9% (81 of 123) physicians with fewer than ten years of experience refer patients with stroke conditions for rehabilitation within the local community, as against 73.9% (51 of 69) of the physicians with 30 or more years of active practice. Despite these examples, however, there is no clear trend with regard to referrals associated with a clinical management category (heart disease, cancer, or stroke conditions) or with regard to any specific reason within each of these categories (acute care, diagnostic studies, surgical management, chronic care, rehabilitation).

With regard to cancer, two reasons for referrals are given which do not apply to either heart conditions or stroke conditions. These are radiation therapy and chemotherapy. For each of these reasons, there is a noticeable difference in the referral patterns followed by physicians with fewer than ten years of experience and by those with thirty or more years of experience. Specifically, the younger physicians (those with the fewest years of practice) tend to make their referrals outside the local community for their cancer patients requiring radiation therapy (58.4%) or chemotherapy (50.4%), while Mountain States physicians with 30 or more years of experience tend to make their referrals within the local community for their cancer patients who require radiation therapy (54.5%), or chemotherapy (63.8%).

2. Type of Practice and Referrals

Table (4)-I-4 contains a tabulation of the number of physicians in the region and in each state who consider their practice to be general and those who consider their practice to be specialized. In addition it shows for each state and for the Region as a whole for each of a number of reasons for referral associated with each of the diseases (heart

Table(4)-I-4. Frequency of Patient Referrals According to Type of Physicians' Practice

REASON FOR REFERRAL	TYPE OF PRACTICE									
	General					Specialized				
	Region	I	M	N	W	Region	I	M	N	W
Heart Disease										
Acute care	216	70	76	26	44	242	77	81	48	36
Diagnostic studies	333	98	124	33	78	310	96	110	57	47
Surgical management	347	105	128	33	81	288	96	104	48	40
Chronic care	194	61	67	24	42	231	75	79	44	33
Rehabilitation	222	66	76	24	56	222	71	77	43	31
Cancer										
Acute care	280	83	98	32	67	221	62	82	46	31
Diagnostic studies	316	97	111	35	73	248	74	92	50	32
Surgical management	336	97	123	37	79	255	80	91	50	34
Chronic care	209	67	69	26	47	211	61	76	45	29
Rehabilitation	210	68	68	26	48	204	57	74	45	28
Radiation therapy	348	103	127	37	81	316	93	118	59	46
Chemotherapy	290	92	100	32	66	229	64	86	47	32
Stroke										
Acute care	190	62	64	24	40	206	58	73	44	31
Diagnostic studies	254	79	84	28	63	234	68	79	49	38
Surgical management	274	84	92	32	66	225	65	81	44	35
Chronic care	195	60	66	23	46	209	60	76	41	32
Rehabilitation	241	75	79	28	59	214	61	77	42	34
Total Respondents	397	119	149	41	88	542	169	188	95	90

disease, cancer, and stroke) the actual number of physicians who consider their practice to be specialized who indicate that they do make referrals. It is evident that, on the regional basis, 42.3% (397 of 939 physicians) consider their practice to be general while 57.7% (542 of 939 physicians) consider their practice to be specialized. Physicians in Idaho and Montana consider their practice to be general or specialized in about the same proportion as the regional average; however, about 30% (41 of 136) of the physicians in Nevada consider their practice to be general (therefore, about 70%, 95 of 136) consider their practice to be specialized; in Wyoming, about half, 88 of 178, of the physicians consider their practice to be general and the other half, 90 of 178, consider their practice to be specialized. In short, there are more physicians in the Mountain States Region who consider their practice to be specialized than those who consider their practice to be general.

Examination of Table (4)-I-4 shows that there are a number of reasons for referral of patients where the greater number (therefore, more than half) of referrals is made by physicians in general practice. The implication is that even though there are proportionately more physicians who consider their practice to be specialized, the greater proportion of referrals is made by those physicians who consider their practice to be general.

Whether for heart disease, cancer, or stroke, more than half the referrals for diagnostic studies and surgical management are made by physicians who consider their practice to be general. In addition, more than half the referrals for rehabilitation of stroke patients and the highest proportion of referrals of cancer patients are made by those physicians who consider their practice to be general. While about half the referrals for chronic care of cancer patients is made by physicians who consider their practice to be general, considerably more than half the referrals of cancer patients for acute care, diagnostic studies, surgical management, rehabilitation, radiation therapy, and chemotherapy are made by physicians who consider their practice to be general.

Thus, the significant observation in Table (4)-I-4 is that proportionately more physicians who consider their practice to be general tend to make referrals than do those physicians whose practice is specialized. Indeed, less than half the physicians who consider their practice to be specialized make referrals for any of the reasons in any of the clinical management categories. Also, a very high proportion of the physicians in general practice make referrals for certain specific reasons in certain specific clinical management categories. (For example, well over three-fourths of the Mountain States physicians who consider their practice to be general make referrals for diagnostic studies in the surgical management of their patients with heart disease and cancer.)

The data presented in Table (4)-I-4 have been converted to percentages and included in Table (4)-I-5 in a further effort to discern patterns in referral based on the physicians' type of practice. In both tables, the focus is on referrals made within the local community by type of practice for each of the reasons for referral in each of the clinical management categories. Thus, for example, the referral of patients for acute care of heart disease is made by 166 of 216 (77%) of the general practitioners and by 223 of 242 (96%) of the specialists. Thus this gives a very clear indication that a higher proportion of referrals made within the local community are those made by physicians who consider their practice to be specialized and a higher proportion of referrals outside the local community is made by physicians who consider their practice to be general.

This discussion may be summed up as follows:

- While a lower proportion of physicians consider their practice to be general, a very high proportion of these physicians do make referrals for a variety of reasons associated with the clinical conditions of heart disease, cancer, and stroke.
- When referrals are made, it is the physicians in general practice (as opposed to those whose practice is specialized) who tend to make referrals outside the local community.

While there are some indications of state differences, the assumptions built into the examination of data so far should not, perhaps, be extended to the individual states. Partly, this is due to the relatively smaller numbers involved. In addition, as has been indicated earlier, the distribution of physicians who consider their practice to be general and those who consider their practice to be specialized is not uniform throughout the states. Thus, notions and observations developed to this point should be considered as an aid to the development of hypotheses, rather than as evidence that confirms a clear-cut position.

C. NEED FOR CONTINUING EDUCATION AND REFERRALS

In the continued attempt to develop some notions about referral practices and patterns of physicians in the Mountain States Region, there would be some value in relating physician assessment of his own needs for continuing education in each of a variety of clinical conditions associated with heart disease, cancer, and stroke, with the referral practices he follows. For example, is there a greater, or lesser tendency to refer patients by

Table(4)-I-5. Percent of Patient Referrals Made Within the Local Community According to Type of Physicians' Practice

REASON FOR REFERRAL	TYPE OF PRACTICE									
	General					Specialized				
	Region	I	M	N	W	Region	I	M	N	W
Heart Disease										
Acute care	77%	83%	80%	85%	57%	96%	91%	91%	96%	92%
Diagnostic studies	35	43	27	61	26	64	61	63	68	64
Surgical management	24	28	20	45	19	46	49	42	56	38
Chronic care	72	75	78	75	55	91	89	92	93	91
Rehabilitation	56	64	57	79	36	87	90	84	91	84
Stroke										
Acute care	84	85	84	92	75	96	98	92	100	97
Diagnostic studies	48	51	40	71	44	87	90	85	94	79
Surgical management	35	36	26	69	32	75	74	72	91	66
Chronic care	72	75	74	87	57	91	95	88	95	88
Rehabilitation	51	56	52	79	32	86	89	86	88	79
Cancer										
Acute care	51	60	49	66	34	86	90	79	91	84
Diagnostic studies	42	48	41	57	29	79	76	76	90	78
Surgical management	39	45	33	62	30	80	75	81	86	79
Chronic care	68	69	74	81	51	87	89	86	91	83
Rehabilitation	59	62	60	77	44	84	89	78	89	79
Radiation therapy	31	30	27	54	28	65	57	73	68	59
Chemotherapy	41	43	38	56	35	72	64	77	85	59

physicians who indicate they feel a need for keeping abreast of changes in the care of patients suffering from a variety of clinical conditions associated with heart disease, cancer, and stroke? Moreover, if referrals are made, is there a relationship between where the referral is made and the physician's assessment of his own need for additional information? While the data organization was not expressly directed to these questions, the multipurpose organization of the data does enable some observations which should contibute to the developing notion of referral patterns and practices of physicians in the Mountain States Region.

Earlier in this report the number and proportions of physicians who feel a need for continuing education has been indicated for each of a variety of clinical conditions associated with heart disease, cancer, and stroke*. In Table (4)-I-1 and in Table (4)-I-2 of this section there is an indication of the number of physicians who make referrals as well as those who indicate that they make referrals only within the local community, (and by implication those who make referrals outside of the local community). On the basis of these data, certain pertinent observations can be made.

1. Clearly, more than half, and in some cases more than two-thirds, of the physicians in the Mountain States Region indicate a need for keeping abreast of changes in the care of patients suffering from a variety of clinical conditions associated with heart disease, cancer and stroke. It is equally clear that more than half the physicians in the Mountain States Region make referrals of their patients with heart disease, cancer, and stroke. Moreover when referrals are made there appears to be some tendency to make referrals outside of the local community, if the referrals are for diagnostic studies or surgical management.

2. It has already been shown (see Part Three, Section I) that the higher proportion of physicians who express a need for continuing education are those who consider their practice to be general. There is also the finding, described immediately above, that the higher proportion of referrals are made by physicians who consider their practice to be general, and moreover, that the higher proportion of referrals outside the local community is made by these same physicians.

3. Can some inference be drawn, then, that relates these observations? With regard to the clinical management of the variety of conditions associated with heart disease, cancer, and stroke, these observations can be made:

   - The higher proportion of referrals outside the local community are made by those physicians who consider their practice to be general.

   - The higher proportion of referrals are made by those physicians who consider their practice to be general.

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* Part Three, Table I-4

- The higher proportion of physicians who feel they need help in keeping abreast of changes in the care of their patients suffering from heart disease, cancer, and stroke is expressed by physicians who consider their practice to be general.

D. CONSULTATIVE SERVICES AND REFERRALS

Physicians in the Mountain States Region were asked to indicate which of several services were needed in their community. The services of concern here are those associated with visiting teams of specialists for acute care, for rehabilitative care, and for instruction. For each type of service, physicians could indicate either a strong need, a moderate need, or no need. Consistent with the approach taken in this report, responses for strong need and moderate need have been grouped so that a clear demarcation of need can be obtained.

The indication of need for each of several types of service by physicians in each of the states, and for the Region as a whole, is indicated in Table (4)-I-6. One observation is that from one to two out of three physicians in the Mountain States Region indicate a need for services used in the diagnosis, treatment and rehabilitation of heart, cancer and stroke patients. This generalization might prove true: about half the physicians in the Mountain States Region indicate a need for services used in the diagnosis, treatment and rehablilitation of heart, cancer and stroke patients. These services include a visiting team of specialists for acute care (cardiologists and neurologists), for rehabilitative care (psychiatrists, orthotist/prosthetist, and vocational counselor) and for instruction (registered nurse and physical therapist).

The greatest proportion of physicians, about six out of ten, express a need for a visiting team of specialists for rehabilitative care. There appears to be some differentiation by physicians in the Mountain States Region in their expression of need for a team of specialists for acute care and for instructional purposes. In the former case about one out of three physicians (35.6%) indicate a need for a visiting team of cardiologists for acute care; however, about six out of ten, 58.8%, of the physicians indicate a need for a visiting team of neurologists for acute care. To some lesser extent physicians in the Mountain States Region differentiate between types of teams of specialists for instructional purposes.

Through this expression of need, there are some differences expressed between the physicians in Nevada and those in Wyoming. For every type of service, a lower proportion of physicians in Nevada and a higher proportion of physicians in Wyoming express a need for these services in their

Table(4)-I-6. Need for Specialist Services as Reported by Physicians

TYPE OF SERVICES	SPECIALIST NEEDED	REGION		IDAHO		MONTANA		NEVADA		WYOMING	
		Freq.	Percent	Freq.	Percent	Freq.	Percent	Freq.	Percent	Freq.	Percent
Acute care	Cardiologist	277	35.6	77	33.4	97	36.6	19	17.4	74	50.7
	Neurologist	473	58.8	158	64.5	160	53.7	44	39.6	111	13.5
Rehabilitative care	Psychiatrist	445	58.9	138	61.6	161	57.5	50	48.5	96	64.4
	Orthotist/ Prosthetist	425	59.2	125	58.1	160	58.6	47	49.5	93	68.9
	Vocational Counselor	474	65.0	144	66.1	171	62.6	55	56.1	104	74.3
Instruction	Registered Nurse	260	37.7	81	39.1	95	36.5	28	29.2	56	44.4
	Physical Therapist	352	48.6	108	50.2	127	46.5	37	37.4	80	58.4

communities. In fact, with the exception of a visiting team of vocational counselors for rehabilitative care, less than half the physicians in the state of Nevada indicate a need for any of the types of services specified in the diagnosis, treatment and rehabilitation of heart, cancer and stroke patients. On the other hand, for every type of service, with the exception of a visiting team of registered nurses for instruction, more than half of the physicians in Wyoming do express a need for services. Even with this exception however, the proportion of physicians in Wyoming (44.4%) who do express a need for a visiting team of registered nurses for instructional purposes is higher than that of any other state or the Region as a whole.

There would be some value in relating physicians' expression of need for various types of services used in the diagnosis, treatment and rehabilitation of heart, cancer and stroke patients with their expression of need in continuing education, and with referral practice. While the data as presently organized do not lend themselves readily to any meaningful interpretations in depth along these dimensions, one observation can be made which may suggest a direction for future thinking.

It has been shown that about half the physicians in the Mountain States Region make referrals of patients for acute care of for rehabilitation (Table (4)-I-1), that most of these referrals are made within the local community (Table (4)-I-2), and that most physicians in the Mountain States Region indicate a need for a visiting team of specialists for rehablilitative care (Table (4)-I-6). In view of all this, one question that arises has to do with why the majority of physicians in the Mountain States Region indicate a need for a visiting team of specialists for rehabilitative care if their tendency is not to refer patients who require such care. One possible answer is suggested by the additional finding that referral of patients for rehabilitative care, when it does occur, is generally made within the local community; namely, that patients requiring rehabilitative care are generally kept on "home" territory and the expressed need is to bring the services to the patient rather then to send the patient where the service is available.

II. DENTISTS

In this section of the report, attention is directed to the referral practices of Mountain States dentists as reported by 625 dentists (of a total of about 1,000) who responded to the MS/RMP survey. What do dentists in the Mountain States Region do if they suspect that one of their patients has oral cancer? Do they refer the patients and, if so, is the referral made within the local community or outside of the local community? Is there a relationship between the purpose of the referral (i.e., whether it is for diagnostic tests or for treatment) and where the referral is made (i.e., within or outside of the local community)? Do referral patterns vary from state to state, or from zone to zone within each of the states? Is the experience (years of active practice) of the dentist a factor in the referral pattern? Finally, do referral practices among dentists differ in accordance with their expressed needs for more education/information associated with cancer conditions?

A. REFERRALS MADE WITHIN AND OUTSIDE OF LOCAL COMMUNITY

Mountain States dentists were asked to indicate where referrals are made, if they refer patients with suspected oral cancer either for diagnostic tests or for treatment. Table (4)-II-1 summarizes their responses. It should be noted that, while the data from the survey do not explicitly indicate the number or proportion of dentists who do not make referrals, these figures can be obtained indirectly by combining the responses indicating referral within and outside the local community and subtracting this combined figure from the total number of responding dentists. The resulting figure represents, by inference, the least number of dentists who do not make referrals. In any case, it is clear that there are considerably more dentists who make referrals within the local community than there are dentists who refer patients outside the local community.*

1. Referral for Diagnostic Studies

For the Region as a whole, about three times as many dentists make referrals within the local community as do outside of the local community for diagnostic studies associated with suspected oral cancer. Specifically:

- Seven out of ten dentists (69.3%) indicate that they make referrals of patients with suspected oral cancer for diagnostic studies within the local community.

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[*] It should be noted that these data are not necessarily mutually exclusive: some dentists may make referrals only within the local community, others may make referrals only outside the local community, while still others may refer both within and outside the local community.

Table (4)-II-1. Referrals of Suspected Oral Cancer as Reported by Dentists

DIAGNOSTIC STUDIES	REGION	IDAHO	MONTANA	NEVADA	WYOMING
Within local community	69.3%	63.3%	73.1%	83.3%	57.4%
Outside local community	23.8	34.6	20.9	6.9	27.7
No referral indicated*	6.9	2.1	6.0	10.1	14.9
TREATMENT					
Within local community	57.0	52.7	56.8	73.5	48.5
Outside local community	24.2	34.0	20.1	8.8	30.7
No referral indicated*					
Total respondents	100.0	100.0	100.0	100.0	100.0

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* "No referral indicated" is the difference between all respondents and those who indicate that they make referrals.

- One out of four dentists (23.8%) indicate that they make referrals of patients suspected of having oral cancer for diagnostic studies outside of the local community.

2. Referral for Treatment

The referral of patients for the treatment of suspected oral cancer follows a pattern very similar to the one above: about two and a half times as many dentists make referrals within their local community as do outside it for the Region as a whole. Specifically:

- Nearly six out of ten dentists (57.0%) state that they make referrals for treatment within the local community.
- One out of four dentists (24.2%) make such referrals outside of the local community.

3. Referral Variations Among the States

There is some variation in dentist referral practices among the four Mountain States as indicated in Table (4)-II-1. In general such variation is minor, with one or two notable exceptions. These exceptions are constant for both diagnostic studies and for the treatment of suspected oral cancer:

- In Nevada, the highest proportion of referrals is made within the local community and the lowest proportion of referrals is made outside the local community.
- In Wyoming, the highest proportion of referrals is made outside the local community and the lowest proportion of referrals is made within the local community.

4. Zone Variations in Dentist Referral Patterns

Differences in referral patterns among the dentists in the Mountain States Region can be identified for the zones within each of the states, although at this level the referral pattern is neither consistant nor clear for all zones. Those zones where the pattern is clear for referrals for diagnostic study and for treatment are identified below:

- A higher proportion of referrals made within the local community is accounted for by the dentists in Idaho (Zones 3 and 6), in Montana (Zone 4), in Nevada (Zones 1 and 2), and in Wyoming

(Zones 4 and 6.).

- A higher proportion of referrals made outside the local community is made by the dentists in Idaho (Zones 1, 2, and 4), in Montana (Zone 4), in Nevada (Zones 1 and 2), and in Wyoming (Zones 1 and 2).

As noted, the referral patterns in other zones in the states is not so clear. For example:

- In Idaho, the referral pattern for Zone 5--whether for diagnostic studies or for the treatment of suspected oral cancer and whether made within or outside of the local community--is always proportionately less than the state average. This would seem to suggest that the dentists in Idaho, Zone 5, tend to make fewer referrals than do the dentists in any of the other zones in Idaho.

- In Montana, dentists in Zone 2 tend to make fewer referrals for the diagnosis of oral cancer and more referrals for the treatment of oral cancer, without regard to whether these referrals are made within or outside of the local community. Further examples of state and zone patterns for dentist referral practices, whether clear or ambiguous, may be obtained from examination of the data contained in Table (4)-I-2. In summary, it can be stated that the single clear trend with regard to referral patterns by dentists in the Mountain States Region is that most dentists do make referrals of patients suspected of having oral concer, whether for diagnostic studies or for treatment, and that most of these referrals are made within the local community.

B. SELECTED CHARACTERISTICS OF DENTISTS MAKING REFERRALS

Table (4)-II-3 shows differences in referral patterns according to the experience of the dentist, as measured by the number of years he has been in active practice. The data in Table (4)-II-3, when viewed in the context of the data in Table (4)-II-1, lead to the following observations:

1. Referral for Diagnostic Studies

In this area principal features of the referral pattern are:

- The highest proportion of dentists who refer patients suspected of having oral cancer for diagnostic studies within the local community is found among dentists who have been in active

Table (4)-II-2. Referral of Patients Suspected of Having Oral Cancer, According to Study Zone, As Reported by Dentists

REASON FOR REFERRAL	Region Average	IDAHO State Average	Zone 1	2	3	4	5	6	7	MONTANA State Average	Zone 1	2	3	4	5
Diagnostic studies within local community	69.3%	63.3%	8	14	*42*	15	19	*20*	1	73.1%	36	42	*36*	15	*42*
outside of local community	23.8	34.6	*10*	*10*	16	*14*	7	5	*3*	20.9	11	12	5	10	11
Treatment within local community	57.0	57.2	5	10	*43*	12	14	*14*	1	56.8	29	*36*	*26*	9	*33*
outside of local community	24.2	34.0	*9*	*13*	16	*13*	5	5	*3*	20.1	*12*	*12*	4	*6*	*13*

	NEVADA State Average	Zone 1	2	3	4	5	6	WYOMING State Average	Zone 1	2	3	4	5	6
Diagnostic studies within local community	83.3%	36	0	*2*	0	0	*47*	57.4%	3	4	*7*	*19*	2	*23*
outside of local community	6.9	*5*	*1*	0	0	0	1	27.7	*5*	*5*	3	1	*5*	9
Treatment within local community	73.5	33	0	1	0	0	*41*	48.5	3	2	3	17	4	20
outside of local community	8.8	*8*	*1*	0	0	0	0	30.7	*7*	*7*	4	2	3	8

NOTE: Italics indicate a proportion of responses higher than the state average.

Table (4)-II-3. Referral of Patients Suspected of Having Oral Cancer According to Experience of Reporting Dentists

REASON FOR REFERRAL	YEARS OF PRACTICE									
	(0 - 9)					(10 - 29)				
DIAGNOSTIC TEST	REGION	IDAHO	MONTANA	NEVADA	WYOMING	REGION	IDAHO	MONTANA	NEVADA	WYOMING
Within local community	71.1%	57.6%	72.4%	81.3%	35.5%	75.3%	71.1%	75.0%	83.3%	76.1%
Outside of local community	30.5	37.9	39.6	10.4	41.9	22.3	35.6	20.7	4.2	19.6
TREATMENT										
Within local community	48.3	47.0	51.7	72.9	38.7	58.7	63.3	62.1	72.9	58.7
Outside of local community	25.6	31.8	25.9	83.3	38.7	24.7	35.6	19.8	10.4	30.4

	YEARS OF PRACTICE				
	(30 - over)				
DIAGNOSTIC TEST	REGION	IDAHO	MONTANA	NEVADA	WYOMING
Within local community	65.4%	54.2%	70.9%	100.0%	54.5%
Outside of local community	15.9	25.0	9.1	0.0	27.3
TREATMENT					
Within local community	44.9	33.3	45.5	83.3	45.5
Outside of local community	19.6	33.3	14.5	0.0	22.7

practice from 10 to 29 years. (Of the 69.3% who exhibit this pattern, 75.3% are in this experience group.)

- Dentists who have been in active practice fewer than 10 years, and those in practice more than 30 years, display similar patterns: a proportionately lower percentage (64.0% and 65.4%, respectively) make referrals within the local community for diagnostic studies of patients suspected of having oral cancer.

- A different pattern is found for referrals made outside the local community: a much higher proportion (30.5%) of the dentists with fewer than 10 years of experience refer patients outside of the local community, and a much lower proportion (15.9%) of dentists with 30 or more years of experience make such referrals.

2. Referral for Treatment

In this area the principal features of the referral pattern show both similarities and differences to the features of the referral pattern for diagnostic studies:

- The pattern is similar with regard to referrals made within the local community: a lower proportion of referrals is made within the local community by dentists having fewer than 10 years or more than 30 years experience, while a higher proportion of referrals is made within the local community by dentists who have been in active practice between 10 and 29 years.

- The pattern is different for referrals made outside the local community. In this situation, about the same proportion of referrals is made outside of the local community by dentists with fewer than 10 years of experience as by those who have been in practice between 10 and 29 years, and a slightly lower proportion of referrals is made by dentists who have been in practice for 30 or more years.

3. State Differences

Some variations among the states in terms of referral patterns vis a vis experience can be noted.

- Better than eight out of ten dentists in Nevada refer patients for diagnostic studies who are suspected of having oral cancer within the local community regardless of their experience.

- However, in Wyoming only about one-third of the dentists who have fewer than ten years of experience refer patients within the local community, while three-fourths of those who have been in practice between 10 and 29 years refer patients within the local community, and about half of those who have been in practice for 30 or more years refer patients locally for diagnostic studies.

C. NEED FOR INFORMATION RELATED TO REFERRAL PRACTICE

A number of dentists in the Mountain States Region indicate either a strong or a moderate need for more education/information concerning cancer conditions. The relationship between this indication of need for more information and the referral practice of the dentists indicating this need are summarized in Table (4)-II-4.

In the Mountain States Region, 473 dentists indicate a strong or moderate need for more education/information related to cancer conditions. Of these, 349 (73.8%) make referrals of patients for diagnostic tests within the local community, and 281 (59.4%) do make referrals of patients suspected of having oral cancer for treatment within the local community. These proportions are very much like those for the Region as a whole (see Table (4)-II-1). Thus, it can be concluded that about the same proportions of referrals are made whether or not dentists indicate a need for more education/information.

It should be emphasized, however, that two-thirds of all dentists in the Mountain States Region indicate a strong or moderate need for more education/information related to the clinical management of cancer conditions (see Part Three, Section II). In some respects, then, Table (4)-II-1 and Table (4)-II-4 are alike, even though Table (4)-II-4 can be viewed as a subset of Table (4)-II-1. Specifically, Table (4)-II-1 does not differentiate referral practices by dentists' indication of need for more education/information. Table (4)-II-4 is concerned exclusively with those dentists who indicate either a strong need or a moderate need for more education/information.

D. SUMMARY

Dentists in the Mountain States Region occasionally come across patients suspected of having oral cancer. In such cases, the majority of dentists make referrals either for further diagnostic studies or for treatment. These referrals tend to be made within the local community. Dentists who have been in practice more than 30 years make proportionately fewer referrals than any of the other dentists in the Mountain States Region, whether these referrals are for diagnostic studies or for the treatment of patients, and whether or not these referrals are made within or out-

Table (4)-II-4. Referral of Patients by Dentists Who Indicate a Need for More Information About Cancer Conditions

REASON FOR REFERRAL	REGION	IDAHO	MONTANA	NEVADA	WYOMING
Diagnostic Tests					
Within local community	73.8%	71.9%	77.8%	84.2%	57.7%
Outside of local community	24.5	34.5	21.9	6.6	32.1
Treatment					
Within local community	59.4	60.4	57.8	71.1	48.7
Outside of local community	24.9	36.0	21.9	7.9	30.8

side of the local community. A similar pattern exists for dentists with fewer than ten years of experience but with some notable exceptions: proportionately fewer of these dentists make referrals within the local community, compared to dentists with 10 to 30 years of experience, while many more of them, proportionately, refer patients for the diagnosis of oral cancer outside of the local community than do those dentists with 10 to 30 years of experience.

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PART FIVE

CONCLUSIONS AND RECOMMENDATIONS

I. INTRODUCTION

This report has been prepared to provide the WICHE Mountain States Regional Medical Program staffs and advisory groups with an organized and detailed description of the responses of health professionals to questions included in the MS/RMP Health Professional Survey data base. These responses, concerning continuing education and patient referral, have been examined at different levels: Region (four states), states, and zones (areas within states). In addition, the analysis considers the responses from a particular group in terms of such factors as age, years of practice in the profession, professional specialization, nature of practice, and professional affiliations. The reason for such consideration is to determine the effect, if any, of these factors on the responses within the professional group. Similarly, so far as the data would permit, the Region wanted to know whether there were characteristics unique to a state or to an area within the state that had a further effect on these responses. To some degree, all of the factors enumerated did affect the responses. The interested reader will find these differences discussed in the sections pertaining to each particular professional group. In this section, only those of most apparent significance for program development and further examination will be noted.

The survey data base from which this report was prepared will support levels of analysis more specific than those considered here. Thus, additional special purpose analyses can be performed to meet future specific needs of the MS/RMP staffs and advisory groups. Study of this report will suggest areas for immediate program development; others will emerge that suggest specific special probes; still others will require further examination of existing data.

This report is sufficiently detailed in its analytical areas to greatly facilitate program planning on both the four-state regional level and the state level. Its utility will become evident after study and use by those responsible for health planning and the establishment of priorities for health programming. However, it is not, nor was it intended to be, the final step in information gathering and analysis. Even with the rich source of information now available for program planning, in the form of this and the other reports that have been prepared, data gathering and assessment must be a continuous process to keep pace with the many changes occurring in the MS/RMP states and in the health field. This report will have served an important purpose if it succeeds in focusing the direction for health programming and serves as the base from which the most strategic and timely programs are developed.

II. MAJOR FINDINGS

The objectives of this particular examination of the MS/RMP Health Professionals Survey data base have been to identify the particular continuing education needs of Mountain States health professionals, to learn the educational methods and procedures most applicable to each of the professional groups, and to identify any professional or practice characteristics that appear to have significant impact on the need for education or on the way in which education is delivered. The results of this examination are enumerated in this section.

For the most part, and for the purposes of the survey, the Mountain States Region can be considered to be quite homogeneous in terms of population, environment, economy, and other factors. The significant exception to the predominantly rural mountain character of the Region is the State of Nevada. Idaho, Montana, and Wyoming fit the pattern. Nevada does not. Nevada has most of its population concentrated in the two large metropolitan complexes centering about Reno and Las Vegas. The result is that more than 85% of the potential health professional participants in this survey are to be found in one or the other of these two highly urbanized areas and the survey responses for each of the professional groups by area (zone) are heavily weighted in favor of the urban as contrasted to the rural practitioner. It further suggests than many of the Nevada differences noted in this report may be attributable to the essentially urban character of the population responding.

A. NEED FOR CONTINUING EDUCATION

1. At least one-half the respondents in each professional group express a need for additional training and education in all heart disease, cancer, and stroke clinical areas. Some areas are emphasized as being of particular concern:

    - lymphoma and leukemia
    - cardiac arrhythmias
    - cancer of the central nervous system
    - peripheral vascular disease
    - stroke rehabilitation

2. There is a strong and persistent need expressed by all surveyed health professionals for continuing education programs covering the broad spectrum of heart disease, cancer, and stroke.

    - This need is most pronounced among the allied professionals, particularly those with more than five years of practice.

- The registered nurses with between 10 and 20 years of experience expressed broader educational needs than do those with under 10 years or over 20 years of experience.

- Within the group of physicians, the general practitioner has stronger needs than the specialist, and those with between 10 and 29 years of practice are most likely to feel these needs.

- The dentists with up to 20 years in practice are more interested in continuing education than those with over 20 years' experience.

- Hospital administrators have very pronounced needs for education in such nonclinical areas as facility administration, business, and personnel management.

3. The distribution of the need expressed by health professionals for continuing education is reasonably uniform throughout the Region and within each of the states, although it is occasionally possible to identify a state or a zone in which the expressed need is unusually high or low in relation to other areas. Where such deviations from the general trend are found, they usually occur because a single professional group has a particular specialized need. Analysis at a level deeper than that performed here will be required to uncover other zone differences that may be somewhat obscured by this document's broader baseline.

B. METHODS FOR CONTINUING EDUCATION

1. Preferred methods of continuing education are those which are oriented to the individual community and, where formal, are relatively short in duration. In addition, the preferred methods are those which maximize current information and are available to the health professional with the least amount of personal or work inconvenience.

2. All professionals express a consistently strong need for delivery of programs directly into their communities, with interest noted in two types of media, regarded as equally important:

    - Tailored programs delivered by experts in their fields. These include demonstration clinics, workshops and, for the allied professionals and registered nurses, WCHEN courses.

    - Medical television and medical radio.

3. The administrators were in substantial agreement with the health professionals in their assessment of needed methods.

4. The physicians and dentists indicate a very high use of professional publications and contact with their peers.

C. ENCOURAGING GREATER PARTICIPATION*

1. The single greatest stimulus for all would be to have the programs closer to home.

2. Two other inducements were also considered important:

    - Payment of training program costs

    - Released time without loss of pay

3. The importance of locally delivered programs is dramatized by the fact that one-fifth of the responding registered nurses said that they could not attend courses outside of their communities even if all expenses were paid. The vast majority indicated difficulty in leaving their home communities, and cited several inhibiting factors. On the other hand, if the programs were offered at home, nine out of ten would willingly participate. The implication is clear: programs that are developed for these professionals (and, by inference, for other allied professionals) should be tailored to provide the training in the professional's home community.

D. CONSUMER AND COMMUNITY HEALTH SUPPORT

1. The care of the patient through the entire rehabilitative and adjustment process is of major concern to the MS/RMP because after the patient leaves the treatment center, he and his family normally must face procedures of recovery and adjustment that are long, regimented, and frequently traumatic. Most health professionals agree that continuous support is critically important in this process.

2. The majority of respondents considered patient support as related to post operative procedures and debilitating effects from heart disease, cancer, and stroke to be marginally adequate.

3. Physicians tended to rate this support higher than the other health professionals, with a clear majority indicating "good" or "excellent" ratings to all except the support given in paralysis, bowel and bladder functions, and speech defects.

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* Only registered nurses and allied professionals were asked questions in this area.

4. As one gets closer to the personnel whose responsibility it is to administer the day-to-day needs of these patients, the assessment of "good" or "excellent" diminishes. For example, none of the areas received a majority of positive ratings by the medical and laboratory technologists or the registered nurses. Only one--colostomy--received majority positive evaluation by the licensed practical nurses.

5. Administrator evaluation is approximately midway between that given by the physicians and the other health professionals. The implications for educational programming for the patient, his family, and the health professionals who participate in the rehabilitative and adjustment processes are quite clear. Programs are needed to ensure that the patient understands his medical treatment, to monitor his progress to the level of adjustment possible, and provide medical and agency support to assist him in his re-entry to the community.

6. Comparable evaluations are made by the health professionals concerning information provided to the public, and concerning interagency exchange of patient data. This suggests the need for a stronger partnership between the individuals who are providing the health care and the many agencies committed to assisting in this process.

E. REFERRAL OF PATIENTS*

1. Physician

- Definite relationships are found between the practice of referral, the source of referral, the kind of practice of the referring physician, and his expressed need for education.

- It is the general practitioner who makes the most referrals, refers more patients inside the local community, and feels the greatest need for continuing education in heart disease, cancer, and stroke.

- Referral of patients for rehabilitative care is more apt to be made within the local community. This suggests a desire on the part of the referring physicians to keep the patient on "home" territory, since physicians also strongly favor setting up visiting teams to bring specialized rehabilitation care to the patient in his community.

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* Survey inquiry was restricted to referrals related to heart disease, cancer, and stroke made by physicians and dentists.

- The incidence of referral out of state and even out of the Region, while proportionately small, is still of sufficient size to indicate potential problems to the patient, such as cost, travel, separation from family, and other inconveniences.

2. Dentist

- Dentists have more limited contact with heart disease, stroke, and cancer patients than do physicians, and their approach is largely constrained by the specialized nature of their profession. Nevertheless, many do perform clinical services in these disease areas, particularly for cancer, and they do make referrals.

- The referral pattern among dentists is to refer within the local community, suggesting that if such patients are later referred to the outside it is a second-order referral.

- Proportionately fewer dentists with under 10 years of experience make referrals within the local community than do those with 10 to 20 years of experience. Further inquiry is needed to explain this interaction.

III. IMPLICATIONS FOR ACTION

The survey was undertaken to provide a comprehensive data base relevant to the goals of the Mountain States Regional Medical Program. The analysis of the data described in this report was performed to provide the MS/RMP with a sound foundation for developing action programs in continuing education for Mountain States health professionals. The findings and conclusions already reported have definite implications for three types of possible action, each of which is discussed briefly below in terms of suggestions for MS/RMP staffs and advisory groups to consider in their planning and program development activities.

A. IMPLICATIONS FOR IMMEDIATE ACTION

1. The clear and overwhelming need expressed by all health professional groups for continuing education in the field of heart disease, cancer, and stroke suggests that the time to start doing something tangible to meet this need is now.

2. Top priority should probably be given to augmenting the continuing education opportunities available to the allied health professionals. They are the ones who assert the need in most numbers, and they are also the ones who express the most dissatisfaction with existing procedures.

3. Short-term training courses in selected clinical and patient care areas, augmented by special demonstration workshops and similar "on-the-job" educational programs, appear to be most urgently desired by most Mountain States health professionals. Accordingly, it would seem to be appropriate to take immediate steps to develop at least some such programs for early implementation.

4. However, in the development of these short-term training programs it is recommended that another strongly voiced preference of the professionals be heeded: the organization, content, and presentation of the programs should be packaged in such a way that the programs are capable of being delivered in the local communities where the professionals have their practices.

5. The findings reported need careful scrutiny along experience, specialization and/or nature of practice, and zone lines to determine whether general purpose programs, specially tailored programs, or both are required.

6. Interest expressed in essentially new methods for continuing education clearly suggests an awareness that there may be better ways to accomplish training. Such interest does not necessarily indicate individual familiarity with a particular delivery technique or method.

7. Although the findings reported here are limited in the sense that they were drawn from the Health Professional Survey, the magnitude and scope of needs identified have immediate implications for planning and program development. Selectivity based on local needs and priorities associated with a broader regional plan emerge as essential immediate and future requirements. This need is most apparent when considered from the frame of reference of limited manpower and economic resources.

B. IMPLICATIONS FOR LONG-RANGE ACTION

1. Work should begin now, in conjunction with the immediate development of short-term training programs, towards the ultimate development of a systematic and comprehensive program to meet both the short-range on-the-job training needs and the long-range career development educational needs of the several categories of health professionals.

2. The apparent requirement to provide as much training and education as possible in the local community suggests the need to look closely at the potential of various mass communications media to overcome the problems of distance, transportation, and manpower while maintaining high-quality educational programs. Such technological aids as educational television and radio, computer assisted instruction, and teaching machines should be given careful evaluation.

3. The responses of the younger physicians--those with fewer than ten years of active practice--indicated relatively low need for continuing education. This raises two interesting implications:

    - These are the physicians most recently out of training and, presumably, most conversant with the latest trends and developments in medicine.

    - By this same token, these are also the physicians who might be recruited to help develop and present continuing education curricula for the benefit of their colleagues who have been away from the formal learning situation for a longer period of time and who, in their responses to the survey, express the greatest need for education.

(page 332 blank)

C. IMPLICATIONS FOR FURTHER STUDY

1. The number and distribution of responses from the health professionals, when looked at in terms of the prevailing pattern of ever-increasing shortages of health manpower, suggest a need for an in-depth investigation of manpower recruitment and retention problems and programs in the Mountain States. As a first step, the analysis of the responses of inactive personnel to the MS/RMP survey (not included in this analysis) should focus on procedures to bring these professionals back into active practice, either on a full- or part-time basis.

2. The disproportionate movement of citizens from the smaller rural areas to areas outside their communities parallels a finding from the MS/RMP Consumer Survey. Both suggest the need to investigate the conditions leading to this movement in more detail. Such a study might well be associated with a broader plan to investigate the types of disease treated in various medical facilities within the Region.

3. The need for special, limited studies will be identified as these findings are assimilated by the Region's staffs and advisory groups. The methodology to use in such studies will be suggested by the characteristics of the particular study.

APPENDIX

MOUNTAIN STATES REGIONAL MEDICAL PROGRAM (WICHE)

Health Professionals Survey:

Questionnaire

MOUNTAIN STATES
REGIONAL MEDICAL PROGRAMS • REGIONAL OFFICE
Telephone 208 · 342-5074
525 West Jefferson Street
Boise, Idaho 83702

Western Interstate Commission for Higher Education
IDAHO • MONTANA NEVADA • WYOMING

ALFRED M. POPMA, M.D.
Director

Dear Doctor:

Several months ago the Governor appointed an advisory committee to study the kinds of medical and health services provided to the people of this State. The study, officially endorsed by the State Medical Association, will give valuable information pertaining to health care needs in the areas of heart disease, cancer and stroke.

As a practitioner knowledgeable about your profession and your community, you are invited to participate in this study by completing the enclosed questionnaire and returning it in the self-addressed postage-paid envelope.

Your responses will help to ascertain present conditions and future needs in the prevention, diagnosis and treatment of heart disease, cancer and stroke. Individual replies will be kept confidential and used for a summary report, a copy of which will be mailed to you.

The success of the study depends upon the participation of such persons as yourself. Thank you for your cooperation.

Claude O. Grizzle

CLAUDE O. GRIZZLE, M.D.
Director, Wyoming State Study
Suite 14, 3100 Henderson Drive
Cheyenne, Wyoming 82001

INSTRUCTIONS

PLEASE COMPLETE ALL QUESTIONS.
IF NOT APPLICABLE, LEAVE QUESTIONS BLANK.

Western Interstate Commission for Higher Education

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in whole or **in part** in any form.

For permission to use this questionnaire write to:

Mountain States Regional Medical Program
Western Interstate Commission for Higher Education
Boulder, Colorado

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REGIONAL MEDICAL PROGRAM
SURVEY OF PHYSICIANS

☐☐☐-☐-☐☐-☐

Data Codes

FORM 6(1)
CARD 1(2)
(3-10) Name ____________________

Address ____________________

(11-12) 1. County of residence ____________________ ☐ Code

(13-14) 2. Age __________ Years

(15) 3. Sex:
1. ☐ Male
2. ☐ Female

(16) 4. Marital status:
1. ☐ Single
2. ☐ Married
3. ☐ Widowed, separated, divorced

(17) 5. Are you presently:
1. ☐ Employed full-time in your profession
2. ☐ Employed part-time in your profession
3. ☐ Employed outside your profession
4. ☐ Not employed
5. ☐ Retired

6. Basic professional preparation:

(18-19) 1. Graduate of ____________________ Year __________

(20-21) 2. Years of active practice as a physician __________

(22) 7. Is your practice:
1. ☐ Private
2. ☐ Non-private

(23) 8. If you are in non-private practice, please check the box below which best describes that practice:
1. ☐ Federal
2. ☐ State
3. ☐ County
4. ☐ City
5. ☐ Research and/or teaching
6. ☐ Other (specify) ____________________

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Data Codes

(24) 9. Which best describes your practice?

1. ☐ General

(25-26) 2. ☐ Specialized (type of specialty)________________ ☐ Code

(27) 10. If you are in general practice are you a member of A.A.G.P.?

1. ☐ Yes 2. ☐ No

11. If you are in specialized practice are you:

(28) 1. Board Eligible 1. ☐ Yes 2. ☐ No Name of Board ________________

(29) 2. Board Certified 1. ☐ Yes 2. ☐ No Name of Board ________________

(30) 12. Arrangement of practice:

1. ☐ Solo
2. ☐ Group
3. ☐ Other (specify)________________

(31) 13. Have you had active military service **as a physician?**

1. ☐ Yes 2. ☐ No

If yes.

(32-33) a. Number of years of active service ________________

(34) b. Was your military practice:

1. ☐ General

(35-36) 2. ☐ Specialized (type of specialty) ________________ ☐ Code

3. ☐ Administration

14. In order to develop a profile of the activities of a **typical week** in your professional practice would you please answer the following questions:

		PER WEEK	DOES NOT APPLY
	a. In a **typical week** how many hours do you spend in:		
(37-38)	1. The office	____	☐
(39-40)	2. The hospital	____	☐
(41-42)	3. An extended care facility	____	☐
(43-44)	4. Administrative detail	____	☐
(45)	b. How many days per week are you **not** on call except for emergency?	____	☐
(46-47)	c. How many home calls do you make per week?	____	☐
	d. In a typical week how many patients do you have at:		
(48-49)	1. Your office	____	☐
(50-51)	2. The hospital	____	☐
(52-53)	3. The extended care facility	____	☐
(54-55)	4. Patient's home	____	☐
	e. How many hours per week are you involved in community activities:		
(56-57)	1. Voluntary health agencies (i.e. Cancer Society)	____	☐
(58-59)	2. Non-professional (i.e. school board, Chamber of Commerce, etc.)	____	☐

15. In your current practice do you take care of patients with the following conditions: (CHECK ALL THAT APPLY)

Data Codes	CLINICAL CONDITION	1. YES	2. NO
(60)	a. Do not work in clinical areas ☐		
(61)	b. Congestive heart failure	☐	☐
(62)	c. Cardiac arrythmias	☐	☐
(63)	d. Hypertensive cardio vascular disease	☐	☐
(64)	e. Myocardial infarction	☐	☐
(65)	f. Rheumatic heart disease	☐	☐
(66)	g. Rheumatic fever	☐	☐
(67)	h. Congenital heart defect	☐	☐
(68)	i. Cerebral vascular accident	☐	☐
(69)	j. Peripheral vascular disease	☐	☐
(70)	k. Stroke rehabilitation	☐	☐
(71)	l. Cancer of gastro-intestinal tract	☐	☐
(72)	m. Cancer of genito-urinary tract	☐	☐
(73)	n. Cancer of skin	☐	☐
(74)	o. Cancer of respiratory tract	☐	☐
(75)	p. Cancer of central nervous system	☐	☐
(76)	q. Cancer of oral cavity, head and neck	☐	☐
(77)	r. Cancer of breast	☐	☐
(78)	s. Lymphoma and leukemia	☐	☐
(79)	t. Other—(specify) ____________	☐	☐

END CARD 1

FORM 6(1)
CARD 2(2)
DUP (3-12)

16. Do you feel you need help in keeping abreast of changes in the care of patients suffering from the clinical conditions listed below: (PLEASE CHECK DEGREE OF NEED)

Data Codes	CLINICAL CONDITION	(1) STRONG NEED	(2) MODERATE NEED	(3) NO NEED
(13)	a. Congestive heart failure	☐	☐	☐
(14)	b. Cardiac arrythmias	☐	☐	☐
(15)	c. Hypertensive cardio vascular disease	☐	☐	☐
(16)	d. Myocardial infarction	☐	☐	☐
(17)	e. Rheumatic heart disease	☐	☐	☐
(18)	f. Rheumatic fever	☐	☐	☐
(19)	g. Congenital heart defect	☐	☐	☐
(20)	h. Cerebral vascular accident	☐	☐	☐
(21)	i. Peripheral vascular disease	☐	☐	☐
(22)	j. Stroke rehabilitation	☐	☐	☐
(23)	k. Cancer of gastro-intestinal tract	☐	☐	☐
(24)	l. Cancer of genito-urinary tract	☐	☐	☐
(25)	m. Cancer of skin	☐	☐	☐
(26)	n. Cancer of respiratory tract	☐	☐	☐
(27)	o. Cancer of central nervous system	☐	☐	☐
(28)	p. Cancer of oral cavity, head and neck	☐	☐	☐
(29)	q. Cancer of breast	☐	☐	☐
(30)	r. Lymphoma and leukemia	☐	☐	☐
(31)	s. Other (specify) ____________	☐	☐	☐

17. If you refer patients for any of the disease entities below, please indicate where the referrals are made for each category:

Data Codes	REASONS FOR REFERRALS	(1) LOCAL COMMUNITY	(2) OUTSIDE LOCAL COMMUNITY	(3) BOTH	IF OUTSIDE LOCAL COMMUNITY PLEASE NAME CITY AND FACILITY
	1. HEART				
(32)	a. Acute care	☐	☐	☐	
(33)	b. Diagnostic studies	☐	☐	☐	
(34)	c. Surgical management	☐	☐	☐	
(35)	d. Chronic care	☐	☐	☐	
(36)	e. Rehabilitation	☐	☐	☐	
	2. STROKE				
(37)	a. Acute care	☐	☐	☐	
(38)	b. Diagnostic studies	☐	☐	☐	
(39)	c. Surgical management	☐	☐	☐	
(40)	d. Chronic care	☐	☐	☐	
(41)	e. Rehabilitation	☐	☐	☐	
	3. CANCER				
(42)	a. Acute care	☐	☐	☐	
(43)	b. Diagnostic studies	☐	☐	☐	
(44)	c. Surgical management	☐	☐	☐	
(45)	d. Chronic care	☐	☐	☐	
(46)	e. Rehabilitation	☐	☐	☐	
(47)	f. Radiation therapy	☐	☐	☐	
(48)	g. Chemotherapy	☐	☐	☐	

18. The following are some current services used in the diagnosis, treatment and rehabilitation of heart, cancer and stroke patients. Please check the degree to which these services are needed in your community:

Data Codes	TYPE OF SERVICE	(1) STRONG NEED	(2) MODERATE NEED	(3) NO NEED
	1. A visiting team of specialists for acute care.			
(49)	a. Cardiologist	☐	☐	☐
(50)	b. Neurologist	☐	☐	☐
(51)	c. Other (specify) ____	☐	☐	☐
	2. A visiting team of specialists for rehabilitative care.			
(52)	a. Psychiatrist	☐	☐	☐
(53)	b. Orthotist/Prosthetist	☐	☐	☐
(54)	c. Vocational Counselor	☐	☐	☐
(55)	d. Other (specify) ____	☐	☐	☐
	3. A visiting team of specialists for instruction			
(56)	a. Registered Nurse	☐	☐	☐
(57)	b. Physical Therapist	☐	☐	☐
(58)	c. Other (specify) ____	☐	☐	☐

Data Codes

19. Please List All Hospital(s) to which you **admit and treat** patients and indicate approximate distance from your place of practice.

Data Codes	Name of Hospital	Distance (to nearest mile)
(59-61)	1. ______________________	______________________
(62-64)	2. ______________________	______________________
(65-67)	3. ______________________	______________________
(68-70)	4. ______________________	______________________

END CARD 2

FORM 6(1)
CARD 3(2)
DUP (3-12)

20. For each hospital where you are a staff member please indicate whether the administration consults with the medical staff on the following:

Data Codes		Hospital 1				Hospital 2				Hosptial 3				Hospital 4			
		1 Always	2 Usually	3 Some	4 Never	1 Always	2 Usually	3 Some	4 Never	1 Always	2 Usually	3 Some	4 Never	1 Always	2 Usually	3 Some	4 Never
(13-16)	a. Budget policy	☐	☐	☐	☐	☐	☐	☐	☐	☐	☐	☐	☐	☐	☐	☐	☐
(17-20)	b. Coordination of facilities, personnel matters and patient service.	☐	☐	☐	☐	☐	☐	☐	☐	☐	☐	☐	☐	☐	☐	☐	☐
(21-24)	c. Changes or additions to physical plant and equipment.	☐	☐	☐	☐	☐	☐	☐	☐	☐	☐	☐	☐	☐	☐	☐	☐

(25-28)

21. For each hospital where you are a staff member please indicate whether a member of the medical staff is a voting member of the Board of Trustees:

Hospital 1			Hospital 2			Hosptial 3			Hospital 4		
Yes	No	Don't know	Yes	No	Don't know	Yes	No	Don't know	Yes	No	Don't know
☐ 1	☐ 2	☐ 3	☐ 1	☐ 2	☐ 3	☐ 1	☐ 2	☐ 3	☐ 1	☐ 2	☐ 3

(29)

22. In your opinion is it desirable for a member of the medical staff to be a voting member of the Hospital Board of Trustees?

1 ☐ Yes 2 ☐ No

Comments: ____

____

____

23. The following are types of hospital facilities and services. Would you please indicate whether or not one of the hospitals to which you admit and treat **most** of your patients has these available. If not available, indicate whether the addition would be justified.

Data Codes	TYPE OF FACILITY OR SERVICE	AVAILABLE		ADDITION WOULD BE JUSTIFIED	
		(1) YES	(2) NO	(1) YES	(2) NO
(30-31)	1. Blood bank	☐	☐	☐	☐
(32-33)	2. Clinical laboratory	☐	☐	☐	☐
(34-35)	3. Pathology laboratory (with pathologist)	☐	☐	☐	☐
(36-37)	4. Electrocardiography	☐	☐	☐	☐
(38-39)	5. Electroencephalography	☐	☐	☐	☐
(40-41)	6. Pharmacy (with registered pharmacist)	☐	☐	☐	☐
(42-43)	7. Physical therapy department (with registered physical therapist)	☐	☐	☐	☐
(44-45)	8. Occupational therapy department (with registered occupational therapist)	☐	☐	☐	☐
(46-47)	9. Speech therapy services (with certified therapist)	☐	☐	☐	☐
(48-49)	10. Operating room	☐	☐	☐	☐
(50-51)	11. Post operative recovery room	☐	☐	☐	☐
(52-53)	12. Intensive care unit	☐	☐	☐	☐
(54-55)	13. Intensive coronary care unit	☐	☐	☐	☐
(56-57)	14. Outpatient department with permanent medical staff	☐	☐	☐	☐
(58-59)	15. Emergency department	☐	☐	☐	☐
(60-61)	16. Xray, diagnostic with radiologist	☐	☐	☐	☐
(62-63)	17. Xray, diagnostic chest	☐	☐	☐	☐
(64-65)	18. Xray, diagnostic gastrointestinal	☐	☐	☐	☐
(66-67)	19. Xray, diagnostic vascular	☐	☐	☐	☐
(68-69)	20. Xray, therapeutic	☐	☐	☐	☐
(70-71)	21. Xray, mammography	☐	☐	☐	☐
(72-73)	22. Radioactive isotope facilities	☐	☐	☐	☐
(74-75)	23. Cobalt	☐	☐	☐	☐
(76-77)	24. Radium therapy	☐	☐	☐	☐
(78-79)	25. Dental facilities	☐	☐	☐	☐
END CARD 3					
FORM 6(1)					
CARD 4(2)					
DUP (3-12)					
(13-14)	26. Premature nursery	☐	☐	☐	☐
(15-16)	27. OB-Delivery room	☐	☐	☐	☐
(17-18)	28. Psychiatric inpatient care unit	☐	☐	☐	☐
(19-20)	29. Medical social service department	☐	☐	☐	☐
(21-22)	30. Organized home care/visiting nurse services	☐	☐	☐	☐
(23-24)	31. Organized hospital auxiliary or Grey Ladies	☐	☐	☐	☐
(25-26)	32. Chapel	☐	☐	☐	☐
(27-28)	33. Extended care facilities	☐	☐	☐	☐
(29-30)	34. Nursing home facilities	☐	☐	☐	☐
(31-32)	35. Adequate emergency patient transportation	☐	☐	☐	☐
(33-34)	36. Pulmonary function test facilities	☐	☐	☐	☐
(35-36)	37. Consulting dietician (ADA)	☐	☐	☐	☐
(37-38)	38. Inhalation therapy	☐	☐	☐	☐
(39-40)	39. Home health aides or homemaker service	☐	☐	☐	☐

24. The following are some current diagnostic laboratory, therapeutic and educational techniques. Please indicate their availability and use:

Data Codes	TECHNIQUE NAME	Is this technique available in your community?		If available do you utilize this technique?		If made available, do you favor utilizing this method in your local community?			If this technique were made available, where should it be located?			
		Yes	No	Yes	No	Yes	No	No Opin.	Your Office	Your Hosp.	Elsewhere In Commun.	Referral Center Outside Commun. Specify City
	1. DIAGNOSTIC LABORATORY											
(41-44)	a. Pap smears											
(45-48)	b. Frozen sections											
(49-52)	c. Cerebral angiography											
(53-56)	d. Pulmonary function tests											
(57-60)	e. 2 step E. K. G.											
(61-64)	f. S G O T											
(65-68)	g. Brain scans											
(69-72)	h. Echoencephalography											
(73-76)	i. Tumor registry											
(77-80)	j. Stroke registry											
END CARD 4												
FORM 6(1) CARD 5(2) DUP (3-12)	2. THERAPEUTIC											
(13-16)	a. Cobalt therapy machine											
(17-20)	b. Nitrogen mustard											
(21-24)	c. Intra-arterial perfusion											
(25-28)	d. Carotid thrombectomy											
(29-32)	e. Open heart surgery											
(33-36)	f. Tumor clinic											
	3. EDUCATIONAL											
(37-40)	a. Journal club											
(41-44)	b. Medical television											
(45-48)	c. Telephone info. retrieval											
(49-52)	d. Medical radio											
(53-56)	e. Tumor board											
(57-60)	f. Audio - tape library											
(61-64)	g. Programmed instruction											

25. In your community what is the quality of the teaching and support provided to patients and their families with the following health problems:

Data Codes	HEALTH PROBLEMS	(1) EXCELLENT	(2) GOOD	(3) FAIR	(4) POOR
(65)	a. Colostomy	☐	☐	☐	☐
(66)	b. Iliostomy	☐	☐	☐	☐
(67)	c. Special dietary needs	☐	☐	☐	☐
(68)	d. Amputations	☐	☐	☐	☐
(69)	e. Speech defects	☐	☐	☐	☐
(70)	f. Paralysis	☐	☐	☐	☐
(71)	g. Bowel and bladder incontinence	☐	☐	☐	☐
(72)	h. Tracheostomy	☐	☐	☐	☐
(73)	i. Limited physical activity	☐	☐	☐	☐

26. Please check whether the **procedures** below are satisfactory or non-satisfactory in the community in which you practice:

Data Codes	PROCEDURES	(1) SATISFACTORY	(2) NON-SATISFACTORY
(74)	a. Dissemination of information to the public concerning the prevention, diagnosis, treatment and rehabilitation of heart disease, cancer and stroke	☐	☐
(75)	b. Exchange of patient information between health agencies, welfare agencies, etc.	☐	☐
(76)	c. Exchange of patient information between departments where you practice	☐	☐

27. Please check whether you feel any of the facilities below are needed to improve patient care in the community where you practice:

Data Codes			
(77)	a. New hospital	1. ☐ Yes	2. ☐ No
(78)	b. New extended care/nursing home	1. ☐ Yes	2. ☐ No
(79)	c. Boarding or personal care home	1. ☐ Yes	2. ☐ No
(80)	d. Remodeling of existing facilities (specify)	1. ☐ Yes	2. ☐ No

END CARD 5

____

Data Codes
FORM 6(1)
CARD 6(2)
DUP (3-12)

28. Please rate clinical management categories a,b,c, below in terms of your need for more education/information as related to your practice:

Data Codes	CLINICAL MANAGEMENT CATEGORIES	(1) STRONG NEED	(2) MODERATE NEED	(3) NO NEED	(4) DOES NOT APPLY TO MY PRACTICE
(13)	a. Heart conditions	☐	☐	☐	☐
(14)	b. Cancer conditions	☐	☐	☐	☐
(15)	c. Stroke conditions	☐	☐	☐	☐

29. The following are methods of continuing medical education that might be beneficial to you in dealing with heart disease, cancer and stroke. Check in the appropriate columns whether or not it is (1) available, (2) used or (3) not available but needed.

Data Codes	METHOD	IS IT AVAILABLE		IS IT USED		IS IT NEEDED	
		(1) YES	(2) NO	(1) YES	(2) NO	(1) YES	(2) NO
(16-18)	a. Demonstrations (ward rounds and clinics where you are the student)	☐	☐	☐	☐	☐	☐
(19-21)	b. Group discussions (seminars and study groups)	☐	☐	☐	☐	☐	☐
(22-24)	c. Supervised clinical practice (where you are the student)	☐	☐	☐	☐	☐	☐
(25-27)	d. Contacts with colleagues	☐	☐	☐	☐	☐	☐
(28-30)	e. Educational films	☐	☐	☐	☐	☐	☐
(31-33)	f. Medical journals	☐	☐	☐	☐	☐	☐
(34-36)	g. Unsolicited medical literature (e.g. pharmaceutical co. material)	☐	☐	☐	☐	☐	☐
	h. Library material						
(37-39)	1. From hospitals	☐	☐	☐	☐	☐	☐
(40-42)	2. From medical schools	☐	☐	☐	☐	☐	☐
(43-45)	3. From medical societies	☐	☐	☐	☐	☐	☐
(46-48)	4. Personal library	☐	☐	☐	☐	☐	☐
(49-51)	i. Audio tape recordings and records	☐	☐	☐	☐	☐	☐
(52-54)	j. Medical television	☐	☐	☐	☐	☐	☐
(55-57)	k. Medical radio	☐	☐	☐	☐	☐	☐
	l. Lectures, panels and symposia sponsored by:						
(58-60)	1. Local hospital	☐	☐	☐	☐	☐	☐
(61-63)	2. Local medical society	☐	☐	☐	☐	☐	☐
(64-66)	3. Medical schools	☐	☐	☐	☐	☐	☐
(67-69)	4. State medical association	☐	☐	☐	☐	☐	☐
(70-72)	5. National medical organization	☐	☐	☐	☐	☐	☐
(73-75)	m. Correspondence courses	☐	☐	☐	☐	☐	☐
(76-78)	n. Other (specify) ______	☐	☐	☐	☐	☐	☐

Data Codes

(79)

END CARD 6

30. What do you feel are the **three** greatest needs which if met would enable you to provide better care for patients with heart disease, cancer and stroke:

1.

2.

3.

PLEASE ADD ANY COMMENTS YOU HAVE PERTAINING TO THIS QUESTIONNAIRE. (SPECIFIC QUESTIONS, ETC.)

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ALFRED M. POPMA, M.D.
Director

Dear Doctor:

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Your responses will help to ascertain present conditions and future needs in the prevention, diagnosis and treatment of heart disease, cancer and stroke. Individual replies will be kept confidential and used for a summary report, a copy of which will be mailed to you.

The success of the study depends upon the participation of such persons as yourself. Thank you for your cooperation.

DAVID L. ROBERTS, M.D.
956 Willow Street
Reno, Nevada 89502

Hugh C. Follmer

HUGH C. FOLLMER, M.D.
2300 Rancho Road
Las Vegas, Nevada 89106

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Western Interstate Commission for Higher Education

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☐☐☐-☐-☐☐-☐

REGIONAL MEDICAL PROGRAM
SURVEY OF DENTISTS

Data Codes	
FORM 4(1) CARD 1(2) (3-10)	Name Address
(11-12)	1. County of residence ☐ Code
(13-14)	2. Age .... Years
(15)	3. Sex: 1. ☐ Male 2. ☐ Female
(16)	4. Marital Status: 1. ☐ Single 2. ☐ Married 3. ☐ Widowed, separated, divorced
(17)	5. Are you presently: 1. ☐ Employed full-time in your profession 2. ☐ Employed part-time in your profession 3. ☐ Employed outside your profession 4. ☐ Not employed 5. ☐ Retired
	6. Basic professional preparation:
(18-19)	1. Graduate of .... Year ....
(20-21)	2. Years of active practice as a dentist ....
(22)	7. Is your practice: 1. ☐ Private 2. ☐ Non-private
(23)	8. If you are in non-private practice, please check the box below which best describes that practice: 1. ☐ Federal 2. ☐ State 3. ☐ County 4. ☐ City 5. ☐ Research and/or teaching 6. ☐ Other (specify) ....

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Data Codes

(24) 9. Which best describes your practice? (CHECK ONE ONLY)

1. ☐ General Dentistry
2. ☐ Pedodontics
3. ☐ Periodontics
4. ☐ Endodontics
5. ☐ Prosthodontics
6. ☐ Orthodontics
7. ☐ Oral Surgery
8. ☐ Oral Pathology
9. ☐ Administration

(25) 10. Arrangement of practice:

1. ☐ Solo
2. ☐ Group
3. ☐ Other (specify)..

(26) 11. Have you had active military service as a dentist?

1. ☐ Yes 2. ☐ No

If yes,

(27-28) a. Number of years of active service ....

(29) b. Which best describes your **military** practice? (CHECK ONE ONLY)

1. ☐ General Dentistry
2. ☐ Pedodontics
3. ☐ Periodontics
4. ☐ Endodontics
5. ☐ Prosthodontics
6. ☐ Orthodontics
7. ☐ Oral Surgery
8. ☐ Oral Pathology
9. ☐ Administration

12. How many hours per week are you involved in community activities:

	COMMUNITY ACTIVITIES	HOURS PER WEEK	DOES NOT APPLY
(30-31)	1. Voluntary health agencies (Cancer Soc., Heart Assoc., etc.)	....	☐
(32-33)	2. Non-professional (i.e. school board, Chamber of Commerce, etc.)	....	☐

(34) 13. Do you take **both** a medical and dental history on new patients?

1. ☐ Yes 2. ☐ No

(35-36) 14. What is the number of patients you treat in a typical day?..................................

(37-38) 15. During the past year, approximately how many patients did you see who you knew had heart disease?..................................

(39-40) 16. During the past year, approximately how many patients did you see who you knew had hypertension?..................................

17. In the course of your practice during the past year **approximately** how many patients did you see exhibiting the following:

(41-42) a. .... Sign(s) of oral cancer affecting lips, tongue, palate, cheeks or floor of mouth.

(43-44) b. .... Sign(s) of cancer—head and neck.

(45-46) c. .... Sign(s) of cancer in other areas.

18. As a means of diagnosis do you:

(47) a. Perform oral cytology .... 1. ☐ Yes 2. ☐ No

(48) b. Perform oral biopsy .... 1. ☐ Yes 2. ☐ No

(49) c. Refer cases for oral cytology .... 1. ☐ Yes 2. ☐ No

(50) d. Refer cases for oral biopsy .... 1. ☐ Yes 2. ☐ No

19. If you refer patients with suspected oral cancer for **diagnostic** tests, please indicate (1) to whom and (2) where referrals are made:

1. TO WHOM
   - (51) a. ☐ Oral Surgeon
   - (52) b. ☐ M.D.
   - (53) c. ☐ Other (specify)..
2. WHERE
   - (54) a. ☐ Local
   - (55) b. ☐ Other locality (specify)..

20. If you refer patients with suspected oral cancer for **treatment**, please indicate (1) to whom and (2) where referrals are made.

1. TO WHOM
   - (56) a. ☐ Oral Surgeon
   - (57) b. ☐ M.D.
   - (58) c. ☐ Other (specify)..
2. WHERE
   - (59) a. ☐ Local
   - (60) b. ☐ Other locality (specify)..

(61) 21. Do you have hospital privileges?
1. ☐ Yes 2. ☐ No

22. Since graduation from dental school have you had any special training in:

(62) a. Diagnosis of oral cancer .... 1. ☐ Yes 2. ☐ No

(63-64) Year of most recent training ....year.

(65) b. Treatment of oral cancer 1. ☐ Yes 2. ☐ No

(66-67) Year of most recent training ....year.

23. Please rate clinical management categories a,b,c below in terms of your need for more education/information as related to your practice:

	CLINICAL MANAGEMENT CATEGORIES	1. STRONG NEED	2. MODERATE NEED	3. NO NEED	4. DOES NOT APPLY TO MY PRACTICE
(68)	a. Heart Conditions	☐	☐	☐	☐
(69)	b. Cancer Conditions	☐	☐	☐	☐
(70)	c. Stroke Conditions	☐	☐	☐	☐

END CARD 1

Data Codes

FORM 4(1)
CARD 2(2)
DUP (3-12)

24. The following are methods of continuing dental education that might be beneficial in dealing with heart disease, cancer and stroke. Check in the appropriate columns whether or not it is (1) available (2) used or (3) not available but needed.

		IS IT AVAILABLE		IS IT USED		IS IT NEEDED	
	METHOD	(1) YES	(2) NO	(1) YES	(2) NO	(1) YES	(2) NO
(13-15)	a. Demonstrations (clinics where you are student)	☐	☐	☐	☐	☐	☐
(16-18)	b. Group discussions (seminars and study groups)	☐	☐	☐	☐	☐	☐
(19-21)	c. Supervised clinical practice where you are student)	☐	☐	☐	☐	☐	☐
(22-24)	d. Contacts with colleagues	☐	☐	☐	☐	☐	☐
(25-27)	e. Educational films	☐	☐	☐	☐	☐	☐
(28-30)	f. Dental journals you subscribe to	☐	☐	☐	☐	☐	☐
(31-33)	g. Unsolicited dental literature (e.g. pharmaceutical company material)	☐	☐	☐	☐	☐	☐
	h. Library materials						
(34-36)	1. From hospitals	☐	☐	☐	☐	☐	☐
(37-39)	2. From dental schools	☐	☐	☐	☐	☐	☐
(40-42)	3. From dental societies	☐	☐	☐	☐	☐	☐
(43-45)	4. From personal library	☐	☐	☐	☐	☐	☐
(46-48)	i. Audio tape recordings and records	☐	☐	☐	☐	☐	☐
(49-51)	j. Medical television	☐	☐	☐	☐	☐	☐
(52-54)	k. Medical radio	☐	☐	☐	☐	☐	☐
	l. Lectures, panels and symposia sponsored by:						
(55-57)	1. Local hospitals	☐	☐	☐	☐	☐	☐
(58-60)	2. Local dental society	☐	☐	☐	☐	☐	☐
(61-63)	3. Dental schools	☐	☐	☐	☐	☐	☐
(64-66)	4. State dental society	☐	☐	☐	☐	☐	☐
(67-69)	5. National dental organization	☐	☐	☐	☐	☐	☐
(70-72)	6. Other (specify)	☐	☐	☐	☐	☐	☐

(73) 25. Do you belong to a study group? 1. ☐ Yes 2. ☐ No

(74) 26. What do you feel are the **three** greatest needs which if met would enable you to provide better dental care for patients with heart disease, cancer and stroke:

1. ....
2. ....
3. ....

END CARD 2

PLEASE ADD ANY COMMENTS YOU HAVE PERTAINING TO THIS QUESTIONNAIRE.
(SPECIFIC QUESTIONS, ETC.)

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Frank L. McPhail

FRANK L. MCPHAIL, M.D.
Director, Montana State Study
Post Office Box 2829
Great Falls, Montana 59401

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REGIONAL MEDICAL PROGRAM
SURVEY OF ADMINISTRATORS

Data Codes

FORM 1(1)
CARD 1 (2)
(3-10)

Name ....

Address ....

(11-12) 1. County of residence .... ☐ Code

(13-14) 2. Age .... Years

(15) 3. Sex:
1. ☐ Male
2. ☐ Female

(16) 4. Marital status:
1. ☐ Single
2. ☐ Married
3. ☐ Widowed, separated, divorced

(17) 5. Are you presently:
1. ☐ Employed full-time in your profession
2. ☐ Employed part-time in your profession
3. ☐ Employed outside your profession

(18) 6. Indicate your highest level of formal education:
1. ☐ 8 grades or less
2. ☐ Some high school
3. ☐ High school graduate
4. ☐ Some college
5. ☐ College graduate
6. ☐ Graduate school

(19) 7. Highest degree or certificate held:
1. ☐ Certificate
2. ☐ Diploma
3. ☐ Associate degree
4. ☐ Baccalaureate degree in profession
5. ☐ Baccalaureate degree in other field
6. ☐ Masters in profession (hospital administration)
7. ☐ Masters in other field
8. ☐ Doctorate
9. ☐ Other (specify) ....
(Example: military)

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Data Codes	
(20)	8. Are you a member of the American College of Hospital Administrators? 1. ☐ Yes 2. ☐ No
(21)	9. Are you an administrator of: (CHECK TYPE OF FACILITY) 1. ☐ General hospital 2. ☐ Psychiatric hospital 3. ☐ Specialized or chronic disease hospital 4. ☐ Nursing home or extended care facility 5. ☐ Other (specify)........................
(22-23)	10. Number of years as an administrator of a hospital or nursing home ....
(24-25)	11. Age of oldest portion of present facility: ....Years

12. Has your facility embarked on a building or remodeling program during the past 5 years?

Data Codes		1. YES	2. NO	IF YES, SPECIFY YEAR(S) OF COMPLETION
(26) (27-28)	a. New building........	☐	☐	....
(29) (30-31)	b. Remodeling..........	☐	☐	....
(32) (33-34)	c. New addition.........	☐	☐	....
(35) (36-37)	d. Extended care facility..	☐	☐	....

13. If yes to any of the above, have these facilities helped you to improve the care of patients with:

Data Codes		1. YES	2. NO	SPECIFY HOW IMPROVEMENTS HAVE HELPED
(38)	a. Heart disease.........	☐	☐	....
(39)	b. Cancer..............	☐	☐	....
(40)	c. Stroke..............	☐	☐	....

14. Do you have definite plans for plant development in the next 2-5 years that will help you to improve the care of patients with:

Data Codes		1. YES	2. NO	SPECIFY HOW IMPROVEMENTS WILL HELP
(41)	a. Heart disease.........	☐	☐	....
(42)	b. Cancer..............	☐	☐	....
(43)	c. Stroke..............	☐	☐	....

15. Do you have major equipment or services which are:

Data Codes		1. YES	2. NO	IF YES, SPECIFY
(44)	a. Not fully utilized.....	☐	☐	....
(45)	b. Utilized beyond capacity	☐	☐	....
(46)	c. Utilized at capacity....	☐	☐	....

Data Codes

16. In caring for patients with heart disease, cancer and stroke, which of the following do you consider your facility needs: (CHECK ALL THAT APPLY)

(47) a. ☐ Additional diagnostic equipment
(48) b. ☐ Better communication between administration and staff
(49) c. ☐ Improved medical record department
(50) d. ☐ Centralized scheduling of services rendered to patients
(51) e. ☐ More complete information regarding availability of services and procedures of the facility
(52) f. ☐ Post graduate training of staff
(53) g. ☐ Improved patient records and charts compiled by physicians
(54) h. ☐ Other (specify) ....

END CARD 1

FORM 2 (1)
CARD 2 (2)
DUP (3-12)

17. The following are methods of continuing education. Please check **all** those which are available to members of your staff. If not available **but needed** please check.

		PHYSICIANS		PARAMEDICAL		ADMINISTRATION	
	METHODS	(1) AVAILABLE	(2) NEEDED	(1) AVAILABLE	(2) NEEDED	(1) AVAILABLE	(2) NEEDED
(13-15)	a. Short term training courses (1-4 weeks).....	☐	☐	☐	☐	☐	☐
(16-18)	b. Workshop (1-3 days)...	☐	☐	☐	☐	☐	☐
(19-21)	c. Special classes conducted in facility.......	☐	☐	☐	☐	☐	☐
(22-24)	d. Educational films.....	☐	☐	☐	☐	☐	☐
(25-27)	e. Educational television..	☐	☐	☐	☐	☐	☐
(29-30)	f. Educational radio......	☐	☐	☐	☐	☐	☐
(31-33)	g. Professional journals and books............	☐	☐	☐	☐	☐	☐
(34-36)	h. Programmed instructions...........	☐	☐	☐	☐	☐	☐
(37-39)	i. Conventions and meetings (national-state-local)............	☐	☐	☐	☐	☐	☐
(40-42)	j. Case conference........	☐	☐	☐	☐	☐	☐
(43-45)	k. Other (specify)................	☐	☐	☐	☐	☐	☐

....

Data Codes

18. Are adequate classroom space and equipment available in your facility for continuing education of personnel:

		1. YES	2. NO	IF NO, SPECIFY NEED
(46)	a. Classroom space	☐	☐	....
(47)	b. Equipment	☐	☐	....

19. Is a person(s) employed full or part-time to conduct continuing education for:

		FULL-TIME	PART-TIME
(48) (49)	a. Medical staff	1. ☐ Yes 2. ☐ No	1. ☐ Yes 2. ☐ No
(50) (51)	b. Other professionals	1. ☐ Yes 2. ☐ No	1. ☐ Yes 2. ☐ No

20. If members of your staff participate in programs of continuing education away from home, does your facility:

(52) a. Pay salaries and expenses while participating . . . 1. ☐ Yes 2. ☐ No

(53) b. Pay only salary while participating . . . . 1. ☐ Yes 2. ☐ No

(54) c. Pay only expenses while participating . . . . 1. ☐ Yes 2. ☐ No

(55) 21. If short term training in the prevention, treatment and rehabilitation of heart, cancer and stroke patients was offered at a center outside of your community would personnel be permitted to attend if expenses were paid by an outside source?

1. ☐ Yes 2. ☐ No

22. If you answered **no** to the above question, please indicate the reasons which might prevent your personnel from attending: (CHECK ALL THAT APPLY)

(56) a. ☐ No one to replace personnel

(57) b. ☐ Family responsibilities of personnel

(58) c. ☐ Objections from personnel

(59) d. ☐ Not interested in such workshops

(60) e. ☐ Other (specify)..

(61) 23. If training in the prevention, treatment and rehabilitation of heart, cancer and stroke patients was offered in your community would personnel be able to attend?

1. ☐ Yes 2. ☐ No

Data Codes

24. If short term training courses were made available to you as an administrator in the areas listed below, would you attend:

Data Codes		1. YES	2. NO
(62)	a. Hospital/nursing home administration	☐	☐
(63)	b. Personnel management	☐	☐
(64)	c. Business management	☐	☐
(65)	d. Purchasing	☐	☐
(66)	e. Budgeting	☐	☐
(67)	f. Medical records	☐	☐
(68)	g. Computer (programming)	☐	☐
(69)	h. Other (specify)................................	☐	☐

25. Which of the following would enable you and your employees to more fully participate in continuing education: (CHECK ALL THAT APPLY)

(70) a. ☐ Payment of expenses
(71) b. ☐ Released time (no loss of salary)
(72) c. ☐ Relief personnel to substitute
(73) d. ☐ Programs closer to home
(74) e. ☐ More complete information about existing programs
(75) f. ☐ Other (specify)................................

END CARD 2
FORM 1 (1)
CARD 3 (2)
DUP (3-12)

26. Does your regular medical staff include the following: (CHECK ONE RESPONSE FOR EACH SPECIALTY)

Data Codes		(1) FULL TIME	(2) PART TIME	(3) REGULAR CONSULTANT	(4) OCCASIONAL CONSULTANT	(5) NOT AVAILABLE
(13)	a. Cardiologist	☐	☐	☐	☐	☐
(14)	b. Neurologist	☐	☐	☐	☐	☐
(15)	c. Radiologist	☐	☐	☐	☐	☐
(16)	d. Pathologist	☐	☐	☐	☐	☐
(17)	e. Anesthesiologist	☐	☐	☐	☐	☐
(18)	f. Neurosurgeon	☐	☐	☐	☐	☐
(19)	g. Psychiatrist	☐	☐	☐	☐	☐
(20)	h. Dentist	☐	☐	☐	☐	☐
(21)	i. Rehabilitation Specialist (Physiatrist)	☐	☐	☐	☐	☐
(22)	j. Orthopedist	☐	☐	☐	☐	☐
(23)	k. Urologist	☐	☐	☐	☐	☐

If any of the above specialists are **not** available, what is done to provide the services when needed?................................

....

Data Codes

27. Which of the following problems do you feel require special effort to maintain acceptable standards of treatment and care in your facility: (CHECK ALL THAT APPLY)

(24) a. ☐ Staffing (including salaries, recruitment, supervision, trained personnel, etc.)

(25) b. ☐ Facilities

(26) c. ☐ Financial resources

(27) d. ☐ Community relations

(28) e. ☐ Other (specify) ....

28. Do you consult with **physicians** on your staff concerning:

Data Codes		(1) ALWAYS	(2) USUALLY	(3) SOME-TIMES	(4) NEVER
(29)	a. Budget policy	☐	☐	☐	☐
(30)	b. Coordination of facilities, personnel matters and patient services	☐	☐	☐	☐
(31)	c. Changes or additions to physical plant and equipment	☐	☐	☐	☐

29. Do you consult with members of your **professional** staff, other than physicians, concerning:

Data Codes		(1) ALWAYS	(2) USUALLY	(3) SOME-TIMES	(4) NEVER
(32)	a. Budget policy	☐	☐	☐	☐
(33)	b. Coordination of facilities, personnel matters and patient services	☐	☐	☐	☐
(34)	c. Changes or additions to physical plant and equipment	☐	☐	☐	☐

30. The following are types of health care facilities and services. Please check those which are available in your facility. If not available indicate whether the addition would be justified.

Data Codes	TYPE OF FACILITY OR SERVICE	AVAILABLE (1) YES	AVAILABLE (2) NO	ADDITION WOULD BE JUSTIFIED (1) YES	ADDITION WOULD BE JUSTIFIED (2) NO
(35-36)	1. Blood bank	☐	☐	☐	☐
(37-38)	2. Clinical laboratory	☐	☐	☐	☐
(39-40)	3. Pathology laboratory (with pathologist)	☐	☐	☐	☐
(41-42)	4. Electrocardiography	☐	☐	☐	☐
(43-44)	5. Electroencephalography	☐	☐	☐	☐
(45-46)	6. Pharmacy (with registered pharmacist)	☐	☐	☐	☐
(47-48)	7. Physical therapy department (with registered physical therapist)	☐	☐	☐	☐
(49-50)	8. Occupational therapy department (with registered occupational therapist)	☐	☐	☐	☐
(51-52)	9. Speech therapy service (with certified therapist)	☐	☐	☐	☐
(53-54)	10. Operating room	☐	☐	☐	☐
(55-56)	11. Post operative recovery room	☐	☐	☐	☐
(57-58)	12. Intensive care unit	☐	☐	☐	☐
(59-60)	13. Intensive coronary care unit	☐	☐	☐	☐
(61-62)	14. Outpatient department with permanent medical staff	☐	☐	☐	☐
(63-64)	15. Emergency department	☐	☐	☐	☐
(65-66)	16. Xray, diagnostic with radiologist	☐	☐	☐	☐
(67-68)	17. Xray, diagnostic chest	☐	☐	☐	☐
(69-70)	18. Xray, diagnostic gastrointestinal	☐	☐	☐	☐
(71-72)	19. Xray, diagnostic vascular	☐	☐	☐	☐
(73-74)	20. Xray, therapeutic	☐	☐	☐	☐
END CARD 3					
FORM 1 (1) CARD 4 (2) DUP (3-12)					
(13-14)	21. Xray, mammography	☐	☐	☐	☐
(15-16)	22. Radioactive isotope facilities	☐	☐	☐	☐
(17-18)	23. Cobalt	☐	☐	☐	☐
(19-20)	24. Radium therapy	☐	☐	☐	☐
(21-22)	25. Dental facilities	☐	☐	☐	☐
(23-24)	26. Premature nursery	☐	☐	☐	☐
(25-26)	27. OB-Delivery room	☐	☐	☐	☐
(27-28)	28. Psychiatric inpatient care unit	☐	☐	☐	☐
(29-30)	29. Medical social service department	☐	☐	☐	☐
(31-32)	30. Organized home care/visiting nurse service	☐	☐	☐	☐
(33-34)	31. Organized hospital or nursing home auxiliary/or grey ladies	☐	☐	☐	☐
(35-36)	32. Chapel	☐	☐	☐	☐
(37-38)	33. Extended care facilities	☐	☐	☐	☐
(39-40)	34. Nursing home facilities	☐	☐	☐	☐
(41-42)	35. Adequate emergency patient transportation	☐	☐	☐	☐
(43-44)	36. Pulmonary function test facilities	☐	☐	☐	☐
(45-46)	37. Consulting dietician	☐	☐	☐	☐
(47-48)	38. Inhalation therapy	☐	☐	☐	☐
(49-50)	39. Homes health aides or homemaker service	☐	☐	☐	☐
END CARD 4					

Data Codes

FORM 1 (1)
CARD 5 (2)
DUP (3-12)

31. In your institution, how many of the following personnel are employed on a full-time or part-time basis? In addition indicate number of budgeted but unfilled positions. (Part-time is considered to be less than 35 hours per week).

Data Codes		DO NOT HAVE	NUMBER FULL-TIME	NUMBER PART-TIME	NUMBER OF BUDGETED BUT UNFILLED POSITIONS
(13) (14-18)	a. Registered Nurse	☐			
(19) (20-24)	b. Licensed Practical Nurse	☐			
(25) (26-30)	c. Anesthetist (CRNA)	☐			
(31) (32-36)	d. Medical Technologist (ASCP)	☐			
(37) (38-42)	e. Laboratory Technician	☐			
(43) (44-48)	f. Radiologic Technologist	☐			
(49) (50-54)	g. Physical Therapist	☐			
(55) (56-60)	h. Pharmacist (registered)	☐			
(61) (62-66)	i. Medical Librarian (RRL or ART)	☐			
(67) (68-77)	j. Dietician (ADA)	☐			

END CARD 5

FORM 1 (1)
CARD 6 (2)
DUP (3-12)

32. Are you having problems in filling the budgeted positions listed above?

(13) 1. ☐ Yes 2. ☐ No

If yes, please indicate types of problems ....

33. What methods does your facility utilize for statistical evaluation of its medical records: (CHECK ALL THAT APPLY)

(14) a. ☐ Manual cross index
(15) b. ☐ McBee edged punched cards
(16) c. ☐ Machine indexing
(17) d. ☐ Computer processing
(18) e. ☐ Professional Activity Study (PAS)
(19) f. ☐ Medical Audit Program (MAP)
(20) g. ☐ Registries (stroke, cancer, etc.)
(21) h. ☐ None
(22) i. ☐ Other (specify) ....

34. In your community what is the quality of the teaching and support provided to patients and their families with the following health problems:

Data Codes	HEALTH PROBLEMS	(1) EXCELLENT	(2) GOOD	(3) FAIR	(4) POOR
(23)	a. Colostomy	☐	☐	☐	☐
(24)	b. Iliostomy	☐	☐	☐	☐
(25)	c. Special dietary needs	☐	☐	☐	☐
(26)	d. Amputations	☐	☐	☐	☐
(27)	e. Speech defects	☐	☐	☐	☐
(28)	f. Paralysis	☐	☐	☐	☐
(29)	g. Bowel and bladder incontinence	☐	☐	☐	☐
(30)	h. Tracheostomy	☐	☐	☐	☐
(31)	i. Limited physical activity	☐	☐	☐	☐

35. Please check whether the procedures below are satisfactory or nonsatisfactory in your community:

Data Codes	PROCEDURES	(1) SATISFACTORY	(2) NON-SATISFACTORY
(32)	a. Dissemination of information to the public concerning the prevention, diagnosis, treatment and rehabilitation of heart disease, cancer and stroke	☐	☐
(33)	b. Exchange of patient information between health agencies, welfare agencies, etc.	☐	☐
(34)	c. Exchange of patient information between departments in your facility	☐	☐

36. Please check whether you feel any of the facilities below are needed to improve patient care in your community:

Data Codes			
(35)	a. New hospital	1. ☐ Yes	2. ☐ No
(36)	b. New extended care/nursing home	1. ☐ Yes	2. ☐ No
(37)	c. Boarding or personal care home	1. ☐ Yes	2. ☐ No
(38)	d. Remodeling of existing facilities	1. ☐ Yes	2. ☐ No

(39) 37. What do you feel are the three greatest needs which if met, would enable your facility to provide better care for patients with heart disease, cancer and stroke:

END CARD 6

1. ....

....

2. ....

....

3. ....

....

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Western Interstate Commission for Higher Education
IDAHO • MONTANA NEVADA • WYOMING

ALFRED M. POPMA, M.D.
Director

Dear Health Professional:

Several months ago the Governor appointed an advisory committee to study the kinds of medical and health services provided to the people of this State. The study will give valuable information pertaining to health care needs in the areas of heart disease, cancer and stroke.

As a health professional knowledgeable about your profession and your community, you are invited to participate in this study by completing the enclosed questionnaire and returning it in the self-addressed postage-paid envelope.

Your responses will help to ascertain present conditions and future needs in the prevention, diagnosis and treatment of heart disease, cancer and stroke. Individual replies will be kept confidential and used for a summary report, a copy of which will be mailed to you.

The success of the study depends upon the participation of such persons as yourself. Thank you for your cooperation.

DAVID L. ROBERTS, M.D.
956 Willow Street
Reno, Nevada 89502

Hugh C. Follmer

HUGH C. FOLLMER, M.D.
2300 Rancho Road
Las Vegas, Nevada 89106

INSTRUCTIONS

PLEASE COMPLETE ALL QUESTIONS.
IF NOT APPLICABLE, LEAVE QUESTIONS BLANK.

Western Interstate Commission for Higher Education

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For permission to use this questionnaire write to:

Mountain States Regional Medical Program
Western Interstate Commission for Higher Education
Boulder, Colorado

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☐☐☐-☐-☐☐-☐

REGIONAL MEDICAL PROGRAM
SURVEY OF REGISTERED NURSES

Data Codes

FORM 5(1)
CARD 1(2)
(3-10)

Name ____________________

Address ____________________

(11-12) 1. County of residence ____________________ ☐ Code

(13-14) 2. Age __________ Years

(15) 3. Sex:
1. ☐ Male
2. ☐ Female

(16) 4. Marital status:
1. ☐ Single
2. ☐ Married
3. ☐ Widowed, separated, divorced

(17) 5. Are you presently:
1. ☐ Employed full-time in your profession
2. ☐ Employed part-time in your profession
3. ☐ Employed outside your profession
4. ☐ Not employed
5. ☐ Retired

(18-19) 6. Years of active practice as a registered nurse __________

(20) (21-22) 7. Basic nursing education:

TYPE	YEAR OF GRADUATION
1. ☐ Diploma	__________
2. ☐ Associate Arts Degree	__________
3. ☐ Baccalaureate Degree	__________
4. ☐ Masters	__________

(23) (24-25) 8. If you **have** a degree, check highest degree held:

TYPE	YEAR OF GRADUATION
1. ☐ Baccalaureate in nursing	__________
2. ☐ Baccalaureate in other field	__________
3. ☐ Masters in nursing	__________
4. ☐ Masters in other field	__________
5. ☐ Doctorate in nursing	__________
6. ☐ Doctorate in other field	__________

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Data Codes

(26) 9. To which of the following nursing organizations do you belong?

1. ☐ A.N.A. 2. ☐ N.L.N. 3. ☐ Neither

10. How many hours per week are you involved in community activities?

Data Codes	COMMUNITY ACTIVITIES	HOURS PER WEEK	DOES NOT APPLY
(27)	1. Voluntary health agencies (Cancer Society, Heart Association, etc.)	______	☐
(28)	2. Non-professional (i.e. school board, Chamber of Commerce, etc.)	______	☐

11. Please check the number of interruptions (of 3 months or more) in your professional career and the appropriate reasons for the interruptions:

(29) 1. ☐ No interruptions

(30-31) 2. ______ Number of interruptions

3. Reasons for the interruptions (CHECK ALL THAT APPLY)

(32) a. ☐ Continue education

(33) b. ☐ Family responsibility (pregnancies, summer vacat'n, etc.)

(34) c. ☐ Spouse objected

(35) d. ☐ Salaries not adequate

(36) e. ☐ Unsatisfactory working conditions

(37) f. ☐ Unsatisfactory arrangement of hours

(38) g. ☐ Changed profession

(39) h. ☐ Spouse transferred

(40) i. ☐ Other—(specify) ______________________________

(41) 12. Would you encourage a person to become a registered nurse?

1. ☐ Yes
2. ☐ No

(42) 13. If the answer is **no,** check the **main** reason from the list below:

1. ☐ Low professional status
2. ☐ Low salary
3. ☐ Working hours
4. ☐ Other—(specify) ______________________________

Data Codes

(43) (44) (45) 14. From the following list, check the **three** most important factors that would encourage persons to enter your profession:

1. ☐ Elimination of age limits
2. ☐ Opportunity for advancement
3. ☐ Better informed high school counselors
4. ☐ More active recruitment in high school
5. ☐ Field trips to health facilities for interested students
6. ☐ More publicity about the profession
7. ☐ Better salaries
8. ☐ Better fringe benefits
9. ☐ Financial assistance for applicants
0. ☐ Other (specify)______________________________

(46-47) 15. How many registered nurses do you know in your community who are **not** working in their profession as the present time?____________
number

*IF YOU ARE PRESENTLY **EMPLOYED AS A REGISTERED NURSE** PLEASE COMPLETE THE QUESTIONS THAT FOLLOW.
*IF YOUR ARE **NOT** EMPLOYED AS A REGISTERED NURSE OR ARE INACTIVE IN NURSING, OMIT THE QUESTIONS THAT FOLLOW AND TURN TO THE LAST PAGE OF THE QUESTIONNAIRE. (48)-1

(49) 16. Which of the following best describes your reason for working: (CHECK **MAIN** REASON ONLY)

1. ☐ Self support
2. ☐ Sole support of family
3. ☐ Supplement family income
4. ☐ Provide children with college education
5. ☐ A desire to obtain some of the luxuries of life
6. ☐ The need to pay off some unexpected bills
7. ☐ Other (specify)______________________________

(50) 17. Are you employed by a:

1. ☐ Private institution (doctor's office, proprietary or religious hospital, nursing home, etc.)
2. ☐ Public institution (federal, state, county or community hospital, etc.)

(51) 18. If you are employed in a **public institution** please check the appropriate box below:

1. ☐ Federal
2. ☐ State
3. ☐ County
4. ☐ City/Community
5. ☐ Research and/or teaching
6. ☐ Other (specify)______________________________

Data Codes

19. The following list covers the major areas for nursing practice. Please check the category which best describes your **usual** nursing practice and the category which best describes your **current** nursing practice. (CHECK ONE ONLY FOR EACH COLUMN)

(52-53) (54-55)

NURSING PRACTICE	USUAL NURSING PRACTICE	CURRENT NURSING PRACTICE
1. General practice (all clinical areas)	☐	☐
2. Pediatric nurse	☐	☐
3. Orthopedic nurse	☐	☐
4. OB-GYN nurse	☐	☐
5. Newborn nursery	☐	☐
6. Psychiatric nursing	☐	☐
7. Operating room nursing	☐	☐
8. Geriatric nursing	☐	☐
9. Medical surgical nursing	☐	☐
10. Nursing administration/supervision	☐	☐
11. Nursing education	☐	☐
12. Inservice education	☐	☐
13. Anesthesia	☐	☐
14. Inhalation therapy	☐	☐
15. Recovery room	☐	☐
16. Intensive care unit	☐	☐
17. Intensive coronary care unit	☐	☐
18. Public health nurse	☐	☐
19. School nursing	☐	☐
20. Industrial nursing	☐	☐
21. Consultation	☐	☐
22. Other (specify)________________	☐	☐

(56)

20. Location of your present position: (CHECK ONE ONLY)

1. ☐ General hospital
2. ☐ Psychiatric hospital
3. ☐ Specialized or chronic disease hospital
4. ☐ Nursing home/extended care facility
5. ☐ Doctor's or dentist's office
6. ☐ Public health agency
7. ☐ School (public)
8. ☐ Industry
9. ☐ Home of patient
10. ☐ School of nursing
11. ☐ Other (specify)________________________________

Data Codes

(57) 21. Nature of position now held:

1. ☐ Administrator or Assistant Administrator
2. ☐ Supervisor or Assistant Supervisor
3. ☐ General duty or staff
4. ☐ Instructor or other faculty title
5. ☐ Private practice
6. ☐ Consultant
7. ☐ Other (specify)______________________________

22. In your current practice do you take care of patients with the following conditions: (CHECK ALL THAT APPLY)

Data Codes	CLINICAL CONDITION	1. YES	2. NO
(58)	a. Do not work in clinical areas ☐		
(59)	b. Congestive heart failure	☐	☐
(60)	c. Cardiac arrythmias	☐	☐
(61)	d. Hypertensive cardio vascular disease	☐	☐
(62)	e. Myocardial infarction	☐	☐
(63)	f. Rheumatic heart disease	☐	☐
(64)	g. Rheumatic fever	☐	☐
(65)	h. Congenital heart defect	☐	☐
(66)	i. Cerebral vascular accident	☐	☐
(67)	j. Peripheral vascular disease	☐	☐
(68)	k. Stroke rehabilitation	☐	☐
(69)	l. Cancer of gastro-intestinal tract	☐	☐
(70)	m. Cancer of genito-urinary tract	☐	☐
(71)	n. Cancer of skin	☐	☐
(72)	o. Cancer of respiratory tract	☐	☐
(73)	p. Cancer of central nervous system	☐	☐
(74)	q. Cancer of oral cavity, head and neck	☐	☐
(75)	r. Cancer of breast	☐	☐
(76)	s. Lymphoma and leukemia	☐	☐
(77)	t. Other—(specify) ________________	☐	☐

23. In the clinical area where you are currently employed have you:

(78)	a. No additional preparation beyond R.N. education	1. ☐ Yes	2. ☐ No
(79)	b. Received additional formal education in clinical area	1. ☐ Yes	2. ☐ No
(80)	c. Received additional on-the-job preparation	1. ☐ Yes	2. ☐ No

END CARD 1

Data Codes
FORM 5(1)
CARD 2(2)
DUP (3-12)

24. Do you feel you need help in keeping abreast of changes in the nursing care of patients suffering from the clinical conditions listed below:

(PLEASE CHECK DEGREE OF NEED)

	CLINICAL CONDITION	(1) STRONG NEED	(2) MODERATE NEED	(3) NO NEED
(13)	a. Congestive heart failure	☐	☐	☐
(14)	b. Cardiac arrythmias	☐	☐	☐
(15)	c. Hypertensive cardio vascular disease	☐	☐	☐
(16)	d. Myocardial infarction	☐	☐	☐
(17)	e. Rheumatic heart disease	☐	☐	☐
(18)	f. Rheumatic fever	☐	☐	☐
(19)	g. Congenital heart defect	☐	☐	☐
(20)	h. Cerebral vascular accident	☐	☐	☐
(21)	i. Peripheral vascular disease	☐	☐	☐
(22)	j. Stroke rehabilitation	☐	☐	☐
(23)	k. Cancer of gastro-intestinal tract	☐	☐	☐
(24)	l. Cancer of genito-urinary tract	☐	☐	☐
(25)	m. Cancer of skin	☐	☐	☐
(26)	n. Cancer of respiratory tract	☐	☐	☐
(27)	o. Cancer of central nervous system	☐	☐	☐
(28)	p. Cancer of oral cavity, head and neck	☐	☐	☐
(29)	q. Cancer of breast	☐	☐	☐
(30)	r. Lymphoma and leukemia	☐	☐	☐
(31)	s. Other (specify) ______________	☐	☐	☐

25. The following are methods of continuing education that might be beneficial to you in dealing with heart disease, cancer and stroke. Check in the appropriate columns whether or not it is (1) available (2) used or (3) not available but needed.

	METHOD	IS IT AVAILABLE (1) YES	(2) NO	IS IT USED (1) YES	(2) NO	IS IT NEEDED (1) YES	(2) NO
(32-34)	a. Short term training courses (1-4 weeks)	☐	☐	☐	☐	☐	☐
(35-37)	b. Workshops (1-3 days)	☐	☐	☐	☐	☐	☐
(38-40)	c. Special classes conducted at place of employment	☐	☐	☐	☐	☐	☐
(41-43)	d. Educational films	☐	☐	☐	☐	☐	☐
(44-46)	e. Educational television	☐	☐	☐	☐	☐	☐
(47-49)	f. Educational radio	☐	☐	☐	☐	☐	☐
(50-52)	g. Professional journals and books	☐	☐	☐	☐	☐	☐
(53-55)	h. Programmed instruction	☐	☐	☐	☐	☐	☐
(56-58)	i. Conventions/meetings of national-state-local nurses association	☐	☐	☐	☐	☐	☐
(59-61)	j. WCHEN courses	☐	☐	☐	☐	☐	☐
(62-64)	k. Other (specify)______________	☐	☐	☐	☐	☐	☐

Data Codes

26. If short term training in the prevention, treatment and rehabilitation of heart, cancer and stroke patients was offered to you at a center outside your community would you attend?

(65) a. At own expense 1. ☐ Yes 2. ☐ No

(66) b. Expenses paid 1. ☐ Yes 2. ☐ No

27. If you checked **no** to part (b) of above question, please indicate the **reasons** which would prevent you from attending:

(67) a. ☐ No one to replace me at work

(68) b. ☐ Family responsibility

(69) c. ☐ Not interested in such workshops

(70) d. ☐ Other (specify)______________________________

(71) 28. If additional training for either the prevention, treatment or rehabilitation of heart, cancer and stroke patients was offered in your community, would you attend?

1. ☐ Yes 2. ☐ No

29. If your answer is **yes**, where would your interest be?

		HEART DISEASE	CANCER	STROKE
(72)	a. Prevention	☐	☐	☐
(73)	b. Treatment	☐	☐	☐
(74)	c. Rehabilitation	☐	☐	☐

(75) 30. If you answered **yes** to the above question, how often would you be willing to attend? (CHECK ONE ONLY)

END CARD 2
FORM 5(1)
CARD 3(2)
DUP (3-12)

1. ☐ Once a month
2. ☐ Every six months
3. ☐ Once a year
4. ☐ Other (specify)______________________________

31. To what degree would the following enable you to more fully participate in continuing education: (PLEASE CHECK ALL THAT APPLY)

		(1) GREAT HELP	(2) SOME HELP	(3) LITTLE HELP	(4) NO HELP
(13)	a. Payment of expenses	☐	☐	☐	☐
(14)	b. Released time (no loss of salary)	☐	☐	☐	☐
(15)	c. Relief to substitute in my absence	☐	☐	☐	☐
(16)	d. Programs closer to home	☐	☐	☐	☐
(17)	e. More complete information about existing programs	☐	☐	☐	☐
(18)	f. Earlier notification of courses	☐	☐	☐	☐
(19)	g. Other (specify)__________	☐	☐	☐	☐

32. The following are types of health care facilities and services. Would you please indicate whether or not the institution where you practice has these available. If not available indicate whether the addition would be justified.

Data Codes	TYPE OF FACILITY OR SERVICE	AVAILABLE (1) YES	AVAILABLE (2) NO	ADDITION WOULD BE JUSTIFIED (1) YES	ADDITION WOULD BE JUSTIFIED (2) NO
(20-21)	1. Blood bank	☐	☐	☐	☐
(22-23)	2. Clinical laboratory	☐	☐	☐	☐
(24-25)	3. Pathology laboratory (with pathologist)	☐	☐	☐	☐
(26-27)	4. Electrocardiography	☐	☐	☐	☐
(28-29)	5. Electroencephalography	☐	☐	☐	☐
(30-31)	6. Pharmacy (with registered pharmacist)	☐	☐	☐	☐
(32-33)	7. Physical therapy department (with registered physical therapist)	☐	☐	☐	☐
(34-35)	8. Occupational therapy department (with registered occupational therapist)	☐	☐	☐	☐
(36-37)	9. Speech therapy services (with certified therapist)	☐	☐	☐	☐
(38-39)	10. Operating room	☐	☐	☐	☐
(40-41)	11. Post operative recovery room	☐	☐	☐	☐
(42-43)	12. Intensive care unit	☐	☐	☐	☐
(44-45)	13. Intensive coronary care unit	☐	☐	☐	☐
(46-47)	14. Outpatient department with permanent medical staff	☐	☐	☐	☐
(48-49)	15. Emergency department	☐	☐	☐	☐
(50-51)	16. Xray, diagnostic with radiologist	☐	☐	☐	☐
(52-53)	17. Xray, diagnostic chest	☐	☐	☐	☐
(54-55)	18. Xray, diagnostic gastrointestinal	☐	☐	☐	☐
(56-57)	19. Xray, diagnostic vascular	☐	☐	☐	☐
(58-59)	20. Xray, therapeutic	☐	☐	☐	☐
(60-61)	21. Xray, mammography	☐	☐	☐	☐
(62-63)	22. Radioactive isotope facilities	☐	☐	☐	☐
(64-65)	23. Cobalt	☐	☐	☐	☐
(66-67)	24. Radium therapy	☐	☐	☐	☐
(68-69)	25. Dental facilities	☐	☐	☐	☐
(70-71)	26. Premature nursery	☐	☐	☐	☐
(72-73)	27. OB-Delivery room	☐	☐	☐	☐
(74-75)	28. Psychiatric inpatient care unit	☐	☐	☐	☐
(76-77)	29. Medical social service department	☐	☐	☐	☐
(78-79)	30. Organized home care/visiting nurse services	☐	☐	☐	☐
END CARD 3 FORM 5(1) CARD 4(2) DUP (3-12)					
(13-14)	31. Organized hospital auxiliary/ or Grey Ladies	☐	☐	☐	☐
(15-16)	32. Chapel	☐	☐	☐	☐
(17-18)	33. Extended care facilities	☐	☐	☐	☐
(19-20)	34. Nursing home facilities	☐	☐	☐	☐
(21-22)	35. Adequate emergency patient transportation	☐	☐	☐	☐
(23-24)	36. Pulmonary function test facilities	☐	☐	☐	☐
(25-26)	37. Consulting dietician (ADA)	☐	☐	☐	☐
(27-28)	38. Inhalation therapy	☐	☐	☐	☐
(29-30)	39. Home health aides or homemaker service	☐	☐	☐	☐

Data Codes	33. In your community what is the quality of the teaching and support provided to patients and their families with the following health problems:				
	HEALTH PROBLEMS	(1) EXCELLENT	(2) GOOD	(3) FAIR	(4) POOR
(31)	a. Colostomy	☐	☐	☐	☐
(32)	b. Iliostomy	☐	☐	☐	☐
(33)	c. Special dietary needs	☐	☐	☐	☐
(34)	d. Amputations	☐	☐	☐	☐
(35)	e. Speech defects	☐	☐	☐	☐
(36)	f. Paralysis	☐	☐	☐	☐
(37)	g. Bowel and bladder incontinence	☐	☐	☐	☐
(38)	h. Tracheostomy	☐	☐	☐	☐
(39)	i. Limited physical activity	☐	☐	☐	☐

34. Please check whether the procedures below are satisfactory or non-satisfactory in the community in which you practice:

	PROCEDURES	(1) SATISFACTORY	(2) NON-SATISFACTORY
(40)	a. Dissemination of information to the public con-concerning the prevention, diagnosis, treatment and rehabilitation of heart disease, cancer and stroke	☐	☐
(41)	b. Exchange of patient information between health agencies, welfare agencies, etc.	☐	☐
(42)	c. Exchange of patient information between departments where you practice	☐	☐

35. Please check whether you feel any of the facilities below are needed to improve patient care in the community where you practice:

(43) a. New hospital 1. ☐ Yes 2. ☐ No

(44) b. New extended care/nursing home 1. ☐ Yes 2. ☐ No

(45) c. Boarding or personal care home 1. ☐ Yes 2. ☐ No

(46) d. Remodeling of existing facilities (specify) 1. ☐ Yes 2. ☐ No

____

Data Codes

36. Which of the following are provided by the institution where you are employed: (CHECK ALL THAT APPLY)

(47) a. ☐ Formal orientation to work situation
(48) b. ☐ Written job description
(49) c. ☐ Regularly scheduled in-service education
(50) d. ☐ Regular evaluation of your work performance
(51) e. ☐ Written patient care policies
(52) f. ☐ Nursing Procedure Manual

37. What could be done to improve your working conditions: (CHECK ALL THAT APPLY)

(53) a. ☐ Decrease work load
(54) b. ☐ More trained personnel
(55) c. ☐ Better utilization of trained personnel
(56) d. ☐ More competent supervision
(57) e. ☐ Decrease work hours
(58) f. ☐ Increase salaries
(59) g. ☐ Increase fringe benefits
(60) h. ☐ Provide more adequate equipment
(61) i. ☐ Improve interdepartmental communications
(62) j. ☐ Provide better opportunities for advancement
(63) k. ☐ Provide better educational opportunities
(64) l. ☐ Increased recognition for job status
(65) m. ☐ Other (specify)________________________

38. Does the administration of the facility where you are employed consult with a member of the professional nursing staff concerning:

Data Codes		(1) ALWAYS	(2) USUALLY	(3) SOMETIMES	(4) NEVER
(66)	a. Budget policy	☐	☐	☐	☐
(67)	b. Coordination of facilities, personnel matters and patient services	☐	☐	☐	☐
(68)	c. Changes or additions to physical plant and equipment	☐	☐	☐	☐

(69)
END CARD 4

39. What do you feel are the **three** greatest needs which if met would enable you to provide better care for patients with heart disease, cancer and stroke:

1. ____________________________________

2. ____________________________________

3. ____________________________________

Data Codes

QUESTIONNAIRE FOR REGISTERED NURSES WHO ARE INACTIVE OR NOT EMPLOYED IN THEIR USUAL PROFESSION AT THE PRESENT TIME

(48)-2 1. Check one (or more) of the reasons listed below which describe why you are inactive:

(49) a. ☐ Professional disillusionment
(50) b. ☐ Passed retirement age
(51) c. ☐ Illness
(52) d. ☐ Family responsibility
(53) e. ☐ Employed in field other than my profession
(54) f. ☐ Current salaries in my profession not adequate
(55) g. ☐ No jobs open in my community
(56) h. ☐ Prefer to remain at home
(57) i. ☐ Spouse unenthusiastic about my working
(58) j. ☐ Poor hours
(59) k. ☐ Distance
(60) l. ☐ Other (specify)________________________________

(61) 2. What is the most important reason above for your not working as a R.N.? ________________________________ ☐ Code
____

(62) 3. Would you be interested in returning to active practice at some time in the future?
1. ☐ Yes 2. ☐ No

(63) 4. If yes, have you any plans for returning to work?
1. ☐ Full-time (35 hours or more per week)
2. ☐ Part-time (under 35 hours per week)

(64) 5. When do you think you would do this?
1. ☐ In the next three months
2. ☐ In the next six months
3. ☐ In the next year
4. ☐ More than a year from now

Data Codes

6. What would you need to enable you to get back to work in your profession on a full-time or part-time basis: (CHECK ALL THAT APPLY)

(65) a. ☐ Better salaries
(66) b. ☐ More flexible hours
(67) c. ☐ Short-term refresher course
(68) d. ☐ Orientation at place of employment
(69) e. ☐ Care for pre-school children (kindergarten, hospital based nurseries, etc.)
(70) f. ☐ Care for school children after school hours
(71) g. ☐ Transportation
(72) h. ☐ Other (specify) ______________________

(73) 7. Of the ones you have checked above, which **one** is the most important factor?

______________________ ☐ Code

(74) 8. With respect to the most important factor, please check the appropriate statement below:

1. ☐ I can do something to resolve this problem.
2. ☐ With a little effort this problem can be resolved
3. ☐ Only by joint efforts of many people can something be done
4. ☐ There is little or nothing I can do about it

(75-77) 9. How long have you been inactive? 1.____ Months (or) 2.____ Years

END CARD 1

PLEASE ADD ANY COMMENTS YOU HAVE PERTAINING TO THIS QUESTIONNAIRE. (SPECIFIC QUESTIONS, ETC.)

____
____
____
____
____
____
____
____

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Boise, Idaho 83702

Western Interstate Commission for Higher Education
IDAHO • MONTANA NEVADA • WYOMING

ALFRED M. POPMA, M.D.
Director

Dear Health Professional:

Several months ago the Governor appointed an advisory committee to study the kinds of medical and health services provided to the people of this State. The study will give valuable information pertaining to health care needs in the areas of heart disease, cancer and stroke.

As a health professional knowledgeable about your profession and your community, you are invited to participate in this study by completing the enclosed questionnaire and returning it in the self-addressed postage-paid envelope.

Your responses will help to ascertain present conditions and future needs in the prevention, diagnosis and treatment of heart disease, cancer and stroke. Individual replies will be kept confidential and used for a summary report, a copy of which will be mailed to you.

The success of the study depends upon the participation of such persons as yourself. Thank you for your cooperation.

Robert S. McKean

ROBERT S. McKEAN, M.D.
Director, Idaho State Study
Suite 1120, Bank of Idaho Building
Boise, Idaho 83702

INSTRUCTIONS

PLEASE COMPLETE ALL QUESTIONS.
IF NOT APPLICABLE, LEAVE QUESTIONS BLANK.

Western Interstate Commission for Higher Education

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For permission to use this questionnaire write to:

Mountain States Regional Medical Program
Western Interstate Commission for Higher Education
Boulder, Colorado

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☐☐☐ ☐ ☐☐ ☐

REGIONAL MEDICAL PROGRAM
SURVEY OF ALLIED PERSONNEL

Data Codes

FORM 2(1)
CARD 1(2)

Name ______________________________

(3-10) Address ______________________________

(11-12) 1. County of residence ____________________ ☐ Code

(13-14) 2. Age __________ Years

(15) 3. Sex: 1. ☐ Male
2. ☐ Female

(16) 4. Marital status:
1. ☐ Single
2. ☐ Married
3. ☐ Widowed, separated, divorced

(17) 5. Are you presently:
1. ☐ Employed full-time in your profession
2. ☐ Employed part-time in your profession
3. ☐ Employed outside your profession
4. ☐ Not employed
5. ☐ Retired

(18-19) 6. Years of active practice in your profession ____________________

(20) 7. Your profession is: (CHECK ONE ONLY)
1. ☐ Physical Therapist
2. ☐ Licensed Practical Nurse
3. ☐ Xray or Radiologic Technologist
4. ☐ Laboratory Technician
5. ☐ Medical Technologist (A.S.C.P.)
6. ☐ Other (specify) ____________________

(21) 8. Indicate your highest level of formal education:
1. ☐ 8 grades or less (elementary)
2. ☐ Some high school
3. ☐ High school graduate
4. ☐ Some college
5. ☐ College graduate
6. ☐ Graduate school

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Data Codes

(22) 9. Highest degree or certificate held:

1. ☐ Certificate
2. ☐ Diploma
3. ☐ Associate degree
4. ☐ Baccalaureate degree in profession
5. ☐ Baccalaureate degree in other field
6. ☐ Masters in profession
7. ☐ Masters in other field
8. ☐ Doctorate
9. ☐ Other (specify)______________________________
   (example: military)

10. How many hours per week are you involved in community activities:

Data Codes	COMMUNITY ACTIVITIES	HOURS PER WEEK	DOES NOT APPLY
(23-24)	1. Voluntary health agencies (Cancer Society, Heart Association, etc.)	________	☐
(25-26)	2. Non-professional (i.e. school board, Chamber of Commerce, etc.)	________	☐

(27) 11. Are you a member of your state/national professional organization?

1. ☐ Yes 2. ☐ No Name of organization(s)__________________________

(28) 12. Are you in favor of state licensing for **your** profession?

1. ☐ Yes 2. ☐ No

13. Please check the number of interruptions (of 3 months or more) in your professional career and the appropriate reasons for the interruptions from the list below:

(29) 1. ☐ No interruptions

(30-31) 2. _____number of interruptions

3. Reasons for the interruptions (CHECK ALL THAT APPLY)

(32) a. ☐ Continue education

(33) b. ☐ Family responsibility (pregnancies, etc.)

(34) c. ☐ Spouse objected

(35) d. ☐ Salaries not adequate

(36) e. ☐ Unsatisfactory working conditions

(37) f. ☐ Unsatisfactory arrangement of hours

(38) g. ☐ Changed profession

(39) h. ☐ Spouse transferred

(40) i. ☐ Other (specify)______________________________

Data Codes

(41) 14. Would you encourage a person to enter your profession?

1. ☐ Yes 2. ☐ No

(42) 15. If the answer is no, check the **main** reason listed below:

1. ☐ Low social status
2. ☐ Low salary
3. ☐ Working hours
4. ☐ Other (specify)______________________________

(43) (44) (45) 16. From the following list, check the **three** most important factors that would encourage persons to enter your profession:

1. ☐ Elimination of age limits
2. ☐ Opportunity for advancement
3. ☐ Better informed high school counselors
4. ☐ More active recruitment in high school
5. ☐ Field trips to health facilities for interested students
6. ☐ More publicity about the profession
7. ☐ Better salaries
8. ☐ Better fringe benefits
9. ☐ Financial assistance for applicants
0. ☐ Other (specify)______________________________

(46) 17. How many person(s) do you know in your profession who live in your community who are not working in their profession at the present time? (Number)________

**IF YOU ARE PRESENTLY EMPLOYED IN YOUR PROFESSION, PLEASE COMPLETE THE QUESTIONS THAT FOLLOW.

IF YOU ARE **NOT EMPLOYED IN YOUR PROFESSION OR INACTIVE, OMIT THE QUESTIONS THAT FOLLOW AND TURN TO THE LAST PAGE OF THE QUESTIONNAIRE.

(47)-1

(48) 18. Which of the following best describes your reason for working: (CHECK **MAIN** REASON ONLY)

1. ☐ Self supporting
2. ☐ Sole support of family
3. ☐ Supplement family income
4. ☐ Provide children with college education
5. ☐ A desire to obtain some of the luxuries of life
6. ☐ The need to pay off some unexpected bills
7. ☐ Other (specify)______________________________

Data Codes

(49) 19. Are you employed by a:

1. ☐ Private institution (doctor's office, proprietary or religious hospital, nursing home, etc.)
2. ☐ Public institution (federal, state, county, or community, etc.)

(50) 20. If you are employed in a **public institution**, please check the appropriate box below:

1. ☐ Federal
2. ☐ State
3. ☐ County
4. ☐ City/Community
5. ☐ Research and/or teaching
6. ☐ Other (specify)________________

(51) 21. Which best describes your professional practice:

1. ☐ General (all areas)
2. ☐ Specialized (type of specialty)________________

(52-53) 22. Location of your present position: (CHECK ONE ONLY)

1. ☐ General hospital
2. ☐ Psychiatric hospital
3. ☐ Specialized or chronic disease hospital
4. ☐ Nursing home/extended care facility
5. ☐ Doctor's or dentist's office
6. ☐ Public health agency
7. ☐ School (public)
8. ☐ Industry
9. ☐ Home of patient
10. ☐ Laboratory (non-institutional or proprietary)
11. ☐ Group practice or clinic
12. ☐ Other (specify)________________

(54) 23. Nature of position now held:

1. ☐ Administrator or Assistant Administrator
2. ☐ Supervisor or Assistant Supervisor
3. ☐ General duty or staff
4. ☐ Instructor or other faculty title
5. ☐ Private practice
6. ☐ Consultant
7. ☐ Office staff
8. ☐ Other (specify)________________

24. In your current practice do you take care of patients with the following conditions: (CHECK ALL THAT APPLY)

Data Codes	CLINICAL CONDITION		1. YES	2. NO
(55)	a. Do not work in clinical areas	☐		
(56)	b. Congestive heart failure		☐	☐
(57)	c. Cardiac arrythmias		☐	☐
(58)	d. Hypertensive cardio vascular disease		☐	☐
(59)	e. Myocardial infarction		☐	☐
(60)	f. Rheumatic heart disease		☐	☐
(61)	g. Rheumatic fever		☐	☐
(62)	h. Congenital heart defect		☐	☐
(63)	i. Cerebral vascular accident		☐	☐
(64)	j. Peripheral vascular disease		☐	☐
(65)	k. Stroke rehabilitation		☐	☐
(66)	l. Cancer of gastro-intestinal tract		☐	☐
(67)	m. Cancer of genito-urinary tract		☐	☐
(68)	n. Cancer of skin		☐	☐
(69)	o. Cancer of respiratory tract		☐	☐
(70)	p. Cancer of central nervous system		☐	☐
(71)	q. Cancer of oral cavity, head and neck		☐	☐
(72)	r. Cancer of breast		☐	☐
(73)	s. Lymphoma and leukemia		☐	☐
(74)	t. Other (specify) ________________		☐	☐

END CARD 1

Data Codes
FORM 2(1) CARD 2(2) DUP (3-12)

25. Do you feel you need help in keeping abreast of changes in the care of patients suffering from the clinical conditions listed below: (PLEASE CHECK DEGREE OF NEED)

	CLINICAL CONDITION	(1) STRONG NEED	(2) MODERATE NEED	(3) NO NEED
(13)	a. Congestive heart failure	☐	☐	☐
(14)	b. Cardiac arrythmias	☐	☐	☐
(15)	c. Hypertensive cardio vascular disease	☐	☐	☐
(16)	d. Myocardial infarction	☐	☐	☐
(17)	e. Rheumatic heart disease	☐	☐	☐
(18)	f. Rheumatic fever	☐	☐	☐
(19)	g. Congenital heart defect	☐	☐	☐
(20)	h. Cerebral vascular accident	☐	☐	☐
(21)	i. Peripheral vascular disease	☐	☐	☐
(22)	j. Stroke rehabilitation	☐	☐	☐
(23)	k. Cancer of gastro-intestinal tract	☐	☐	☐
(24)	l. Cancer of genito-urinary tract	☐	☐	☐
(25)	m. Cancer of skin	☐	☐	☐
(26)	n. Cancer of respiratory tract	☐	☐	☐
(27)	o. Cancer of central nervous system	☐	☐	☐
(28)	p. Cancer of oral cavity, head and neck	☐	☐	☐
(29)	q. Cancer of breast	☐	☐	☐
(30)	r. Lymphoma and leukemia	☐	☐	☐
(31)	s. Other (specify) ________________	☐	☐	☐

8

Data Codes

26. The following are methods of continuing education that might be beneficial to you in dealing with heart disease, cancer and stroke. Check in the appropriate columns whether or not it is (1) available, (2) used or (3) not available but needed.

Data Codes	METHOD	IS IT AVAILABLE (1) YES	IS IT AVAILABLE (2) NO	IS IT USED (1) YES	IS IT USED (2) NO	IS IT NEEDED (1) YES	IS IT NEEDED (2) NO
(32-34)	a. Short-term training courses (1-4 weeks)	☐	☐	☐	☐	☐	☐
(35-37)	b. Workshops (1-3 days)	☐	☐	☐	☐	☐	☐
(38-40)	c. Special classes conducted at place of employment	☐	☐	☐	☐	☐	☐
(41-43)	d. Educational films	☐	☐	☐	☐	☐	☐
(44-46)	e. Educational television	☐	☐	☐	☐	☐	☐
(47-49)	f. Educational radio	☐	☐	☐	☐	☐	☐
(50-52)	g. Professional journals and books	☐	☐	☐	☐	☐	☐
(53-55)	h. Programmed instruction	☐	☐	☐	☐	☐	☐
(56-58)	i. Conventions meetings of national-state-local association	☐	☐	☐	☐	☐	☐
(59-61)	j. WCHEN courses	☐	☐	☐	☐	☐	☐
(62-64)	k. Other (specify) ______________	☐	☐	☐	☐	☐	☐

27. If short term training in the prevention, treatment and rehabilitation of heart, cancer and stroke patients was offered to you at a center outside your community would you attend?

(65) a. At own expense 1 ☐ Yes 2 ☐ No

(66) b. Expenses paid 1 ☐ Yes 2 ☐ No

28. If you checked **no** to part (b) of above question, please indicate the **reasons** which would prevent you from attending:

(67) a. ☐ No one to replace me at work

(68) b. ☐ Family responsibilities

(69) c. ☐ Not interested in such workshops

(70) d. ☐ Other (specify) ______________________________

END CARD 2

Data Codes
FORM 2(1)
CARD 3(2)
DUP (3-12)

(13) 29. If additional training for either the prevention, treatment or rehabilitation of heart, cancer and stroke patients was offered in your community, would you attend?

1. ☐ Yes 2. ☐ No

30. If your answer is **yes**, where would your interest be?

Data Codes		HEART DISEASE	CANCER	STROKE
(14) (15) (16)	a. Prevention	☐	☐	☐
(17) (18) (19)	b. Treatment	☐	☐	☐
(20) (21) (22)	c. Rehabilitation	☐	☐	☐

(23) 31. If you answered **yes** to the above question, how often would you be willing to attend? (CHECK ONE ONLY)

1. ☐ Once a month
2. ☐ Every six months
3. ☐ Once a year
4. ☐ Other (specify)______________________________

32. To what degree would the following enable you to more fully participate in continuing education: (CHECK ALL THAT APPLY)

Data Codes		(1) GREAT HELP	(2) SOME HELP	(3) LITTLE HELP	(4) NO HELP
(24)	a. Payment of expenses	☐	☐	☐	☐
(25)	b. Released time (no loss of salary)	☐	☐	☐	☐
(26)	c. Relief to substitute in my absence	☐	☐	☐	☐
(27)	d. Programs closer to home	☐	☐	☐	☐
(28)	e. More complete information about existing programs	☐	☐	☐	☐
(29)	f. Earlier notification of courses	☐	☐	☐	☐
(30)	g. Other (specify)________________	☐	☐	☐	☐

6

Data Codes

33. In your community, what is the quality of the teaching and support provided to patients and their families with the following health problems:

Data Codes	HEALTH PROBLEMS	(1) EXCELLENT	(2) GOOD	(3) FAIR	(4) POOR
(31)	a. Colostomy	☐	☐	☐	☐
(32)	b. Iliostomy	☐	☐	☐	☐
(33)	c. Special dietary needs	☐	☐	☐	☐
(34)	d. Amputations	☐	☐	☐	☐
(35)	e. Speech defects	☐	☐	☐	☐
(36)	f. Paralysis	☐	☐	☐	☐
(37)	g. Bowel and bladder incontinence	☐	☐	☐	☐
(38)	h. Tracheostomy	☐	☐	☐	☐
(39)	i. Limited physical activity	☐	☐	☐	☐
(40)	j. Other (specify)____________	☐	☐	☐	☐

34. Please check whether the **procedures** below are satisfactory or non-satisfactory in the community in which you work:

Data Codes	PROCEDURES	(1) SATISFACTORY	(2) NON-SATISFACTORY
(41)	a. Dissemination of information to the public concerning the prevention, diagnosis, treatment and rehabilitation of heart disease, cancer and stroke	☐	☐
(42)	b. Exchange of patient information between health agencies, welfare agencies, etc.	☐	☐
(43)	c. Exchange of patient information between departments where you practice	☐	☐

35. Please check whether you feel any of the improvements below are needed to improve patient care in the community where you work:

(44) a. New hospital 1. ☐ Yes 2. ☐ No
(45) b. New extended care nursing home 1. ☐ Yes 2. ☐ No
(46) c. Boarding or personal care home 1. ☐ Yes 2. ☐ No
(47) d. Remodeling of existing facilities 1. ☐ Yes 2. ☐ No
(specify)____________________

Data Codes

36. Which of the following are provided by the institution where you are employed: (CHECK ALL THAT APPLY)

(48) a. ☐ Formal orientation to work situation
(49) b. ☐ Written job description
(50) c. ☐ Regularly scheduled in-service education
(51) d. ☐ Regular evaluation of your work performance
(52) e. ☐ Written patient care policies
(53) f. ☐ Procedure Manual

37. What could be done to improve your working conditions: (CHECK ALL THAT APPLY)

(54) a. ☐ Decrease work load
(55) b. ☐ More trained personnel
(56) c. ☐ Better utilization of trained personnel
(57) d. ☐ More competent supervision
(58) e. ☐ Decrease work hours
(59) f. ☐ Increase salaries
(60) g. ☐ Increase fringe benefits
(61) h. ☐ Provide more adequate equipment
(62) i. ☐ Improve interdepartmental communications
(63) j. ☐ Provide better opportunities for advancement
(64) k. ☐ Provide better educational opportunities
(65) l. ☐ Increased recognition for job status
(66) m. ☐ Other (specify)__________________________________

38. Does the administration of the facility where you are employed consult with a member of your profession concerning:

		(1) ALWAYS	(2) USUALLY	(3) SOMETIMES	(4) NEVER
(67)	a. Budget policy	☐	☐	☐	☐
(68)	b. Coordination of facilities, personnel matters and patient services	☐	☐	☐	☐
(69)	c. Changes or additions to physical plant and equipment	☐	☐	☐	☐

(70) 39. What do you feel are the **three** greatest needs which if met would enable you to provide better care for patients with heart disease, cancer and stroke:

END CARD 3

1. ____
2. ____
3. ____

Data Codes
FORM 2(1)
CARD 4(2)
DUP (3-12)

MEDICAL TECHNOLOGISTS (A.S.C.P.) AND LABORATORY TECHNICIANS

(13) 1. Do you have a quality control program in connection with your laboratory?
1. ☐ Yes 2. ☐ No

(14) 2. If yes, is it adequate?
1. ☐ Yes 2. ☐ No

(15) 3. Is it within the lab itself? 1. ☐ Yes 2. ☐ No
(16) b. Is it done with each test? 1. ☐ Yes 2. ☐ No
If **no**, state frequency____________________

(17) 4. Are you participating in a national program of unknown sample surveys?
1. ☐ Yes 2. ☐ No
(18) If yes, 1. ☐ On a quarterly basis
2. ☐ On a yearly basis
3. ☐ Other (specify)____________________

(19) 5. Type of quality control your laboratory participates in:
1. ☐ None
2. ☐ Laboratory exchange
3. ☐ Known-unknown tests
4. ☐ Other (specify)____________________

(20) 6. Do you feel the laboratory where you work is able to give service equal to that in other parts of the State?
1. ☐ Yes 2. ☐ No

(21) 7. Is your laboratory directed by:
1. ☐ Pathologist
2. ☐ M.D.
3. ☐ Ph.D.
4. ☐ Technologist
5. ☐ Technician

8. Do you feel that your laboratory is adequately:
(22) a. Staffed 1. ☐ Yes 2. ☐ No
(23) b. Equipped 1. ☐ Yes 2. ☐ No

(24) 9. Nature of position now held:
1. ☐ Technician
2. ☐ Medical Technologist, general duty
3. ☐ Assistant Laboratory Supervisor
4. ☐ Section Head
5. ☐ Teaching Supervisor
6. ☐ Other (specify)____________________

10 Type of registration now held: (CHECK ALL THAT APPLY)
(25) a. ☐ None
(26) b. ☐ Registered Technician
(27) c. ☐ Medical Technologist
(28) d. ☐ Histological Technician
(29) e. ☐ Microbiology
(30) f. ☐ Chemistry
(31) g. ☐ Blood Banking
(32) h. ☐ Exfoliative Cytology
(33) i. ☐ Nuclear Medical Technology
END CARD 4

QUESTIONNAIRE FOR PERSONS WHO ARE INACTIVE OR NOT EMPLOYED IN THEIR USUAL PROFESSION AT THE PRESENT TIME

Data Codes	
(47)-2	1. Check one (or more) of the reasons listed below which describes why you are inactive:
(48)	a. ☐ Professional disillusionment
(49)	b. ☐ Passed retirement age
(50)	c. ☐ Illness
(51)	d. ☐ Family responsibility
(52)	e. ☐ Employed in field other than my profession
(53)	f. ☐ Current salaries in my profession not adequate
(54)	g. ☐ No jobs open in my community
(55)	h. ☐ Prefer to remain at home
(56)	i. ☐ Spouse unenthusiastic about my working
(57)	j. ☐ Poor hours
(58)	k. ☐ Distance
(59)	l. ☐ Other (specify)____________________
(60)	2. Would you be interested in returning to active practice at some time in the future?
	1. ☐ Yes 2. ☐ No
(61)	3. If **yes**, have you any plans for returning to work?
	1. ☐ Full-time (35 hours or more per week)
	2. ☐ Part-time (under 35 hours per week)
	4. What would you need to enable you to get back to work in your profession on a full or part time basis: (CHECK ALL THAT APPLY)
(62)	a. ☐ Better salaries
(63)	b. ☐ More flexible hours
(64)	c. ☐ Short-term refresher course
(65)	d. ☐ Orientation at place of employment
(66)	e. ☐ Care for preschool children (kindergarten, hospital based nurseries, etc.)
(67)	f. ☐ Care for school children after school hours
(68)	g. ☐ Transportation
(69)	h. ☐ Other (specify)____________________
END CARD 1	

PLEASE ADD ANY COMMENTS YOU HAVE PERTAINING TO THIS QUESTIONNAIRE. (SPECIFIC QUESTIONS, ETC.)

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